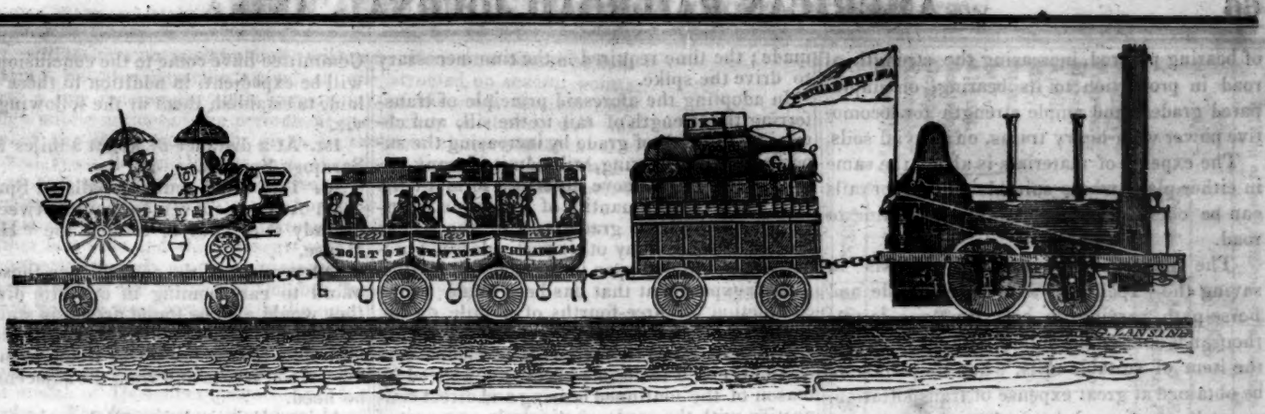

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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New-York and Erie Railroad.—This important public improvement seems to attract less attention at this moment of pressure and despondency, than it merits. The great question now seems to be how to pay old, rather than to contract new, liabilities; and so it should be: yet such a measure as that of opening a more direct, easy, and expeditious communication between this city and the great west, should not, for a moment, be lost sight of. Every preliminary measure for immediate action, when the sun of prosperity shall again arise, should be adopted, and every man who has an interest in the prosperity of either the country at large, that through which the road is to pass, or of this city, should be ready to aid in its accomplishment. We have often referred to this contemplated railroad, as a measure in which the state, *as* a state, ought to take an interest. It would be to the southern what the canals are to the northern part of the state; and *by whom were those* constructed? Were they not built by the STATE? If they were, why should the state hesitate to confer equal benefits on other parts of the state, where the *public at large* would *be equally benefitted?* The people of the southern part of the state are equally entitled with those of the northern part, to public improvements, if those improvements will contribute equally to the general prosperity of the country; and therefore the legislature cannot, in justice, withhold the aid of the state from this important improvement.

[COMMUNICATED]

New-York, 1st Feb., 1834.

Hon. Stephen Allen,
Chairman Water Com.:

Sir,—By a note recently received from Mr. Ogden, one of the assistants on the water survey, I regret to learn that the arrangement of his name, second in order, in the roll of the party annexed to my report, is considered by him as reflecting invidiously upon his professional standing and character; and as nothing was further from my purpose than to make any reflection of that kind, I cheerfully accord to his wishes in submitting the following explanations.

Mr. Ogden and Mr. Cartwright were the heads of two *co-ordinate* branches of the service; the *former* having charge of the levelling operations, and the *latter* that of the traverse work: but as both performed their duties in immediate relation to myself, as the head of the party, they acted without any particular relations of responsibility or subordination *with respect to each other.*

In drawing up the roll referred to, the name of Mr. Cartwright was placed first, in consideration of his age and general respectability of character, without intending to imply, by any means, that he was the *official superior* of Mr. Ogden. In fact, the duties of the *latter*, according to the *routine* of the service, necessarily *preceded* those of the *former*, and in point of professional responsibility, were second only to those of the principal engineer.

Presuming that these explanations will remove any unfavorable impressions of the kind alluded to, I remain, very respectfully, your obedient servant, D. B. Douglass,
Chief Engineer on the late Water Survey.

Economy in the Use of Steam. [Communicated for the American Railroad Journal, and Advocate of Internal Improvements.]

It has been for several years past, to the writer, an important object, and a favorite study, to effect, if possible, a saving in the use of steam; and after a great variety of experiments on the subject, he has arrived at the conclusion, and believes he can demonstrate clearly to every rational mind, by actual experiment, a saving of nearly one-half, by the use of double cylinder engines. In order to illustrate the fact, he has fitted up a small model, so arranged as to give every possible chance to test fairly the correctness of his theory. The machine above mentioned is constantly in operation at Wm. T. James' foundry and steam engine factory, No. 40 Eldridge street, where those interested in such matters are respectfully invited to call and satisfy themselves.

The following is the plan of Mr. E. Johnson for constructing railroads, referred to in our last. It is a plan upon which we should like to have the opinion of experienced engineers.

Mr. Johnson will also oblige us by communicating the probable expense of such a railroad in ordinary situations.

A New Plan for the Construction of the Wood Work of Railroads. By Elisha Johnson. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

Sir,—Having introduced a new plan for the construction of the wood work of railroads, which is adopted by the directors of the Buffalo and Black Rock Railroad Company, I wish, through your valuable Journal, to give a brief description of the same, in answer to inquiries that have been made.

Place longitudinal sills, *a a*, of round timber one foot in diameter, hewed on one side, even with the surface of the grade; cover the road bed with plank, *b*, two and one-half inches in thickness, and seven feet long, resting upon the grade and sills; over the sills place two by four inch scantling, *c c*, on which are placed the iron plates: all of which parts are secured by eight-inch spikes, terminating in the sills.

The plan is proposed for new districts of country, where the location of the line of road is through low table lands, or the rich farming lands of secondary formation, which are retentive of moisture, or light sand soils; all of which would require expensive preparations of the grade by rubble or gravel blind drains, &c., to prepare for the reception of the timber work.

In the usual form of timber constructions, it has a superficial bearing of twenty-nine feet upon the grade, to the rod. In the above form, there is one hundred fifteen and one-half feet

of bearing per rod, increasing the strength of road in proportion to its bearing, on unprepared grades, and ample strength for locomotive power with heavy trains, on alluvial soils.

The expense of materials is about the same in either plan, where suitable timber for rails can be obtained in the vicinity of the line of road.

The improvement proposed consists in saving the expense of a prepared grade and horse path, varying in cost from one to two thousand dollars per mile; also, a saving of the item of suitable rails, when they have to be obtained at great expense of transportation, as well as the mechanical work connected with them.

The plan proposes other advantages, viz.: the admission of the use of such timber as is most convenient to obtain near the line of road; a material saving of expense in passing water-courses, bridges; and the construction of turnouts and crossings by a continuous floor, which forms a roof to the grade; when by use and the effect of rains, the joints of the timber are filled with earth, the water passing off through triangular apertures △, at the meeting at the ends of the supports to the iron; greater security from the effect of frost, by reason of the form of construction and a dry grade; the spike that secures the iron, secures the different parts of the timber work; a dry horse-path, which is proposed to be protected by the use of a thin coating of sand over the floor—this will protect the timber from the effects of the sun, and preserve a more uniform moisture, aiding the preservation of the timber.

In reference to objections that may be urged against proposed improvements, it is not practicable to answer them fully, except by the test of experiment. In the construction and use of such a form of road, it is suggested that it may be inconvenient to repair an imperfect embankment, which is remedied by the ease which the wood work may be taken up and put down again, or by having movable plank at every three or five feet, to be drawn out from between the spike or every other plank moveable, if screwed six inches in width.

The wear of the plank and the effect upon the horse at a speed of ten miles per hour, are proper questions of inquiry. In answer, the wear of the plank: by comparisons made without protection, as proposed, it is satisfactorily ascertained that the wear will be less than the decay for the amount of horse power required on railroads, if locomotive power is not used. The effect upon the horse is believed to be more favorable than upon a compact gravel road in dry weather or frozen earth, ice, or stony roads, if not relieved by the sand covering.

A question may arise, of comparative effect upon the decay of the timber. In the common form, parts of the work, such as the tenants of the cross timber or sleepers, are believed to be in the most exposed situation they can be placed; when in the proposed form, by a continuous bearing upon the grade, the timber can be used in an advanced state of decay.

The simple form of construction removes a prominent cause of expense in the details of the management of laborers and mechanics necessary in completing the several parts in the common form of construction: if connected with the contracts for grading, the sills are put into the grade as a part of the contract. Twelve days, with one superintendant, one mechanic, and six laborers, will complete a mile of road, with the materials delivered on the line, tested by experiments that have been made; the time required is the time necessary to drive the spike.

In adopting the aforesaid principle of transferring the strength of rail to the sill, and obtaining strength of grade by increasing the superficial feet of bearing, will admit of many variations from the above described form, in the size, quality, and quantity of timber, in different descriptions of grade, and in the use of red cedar, with many other particulars not proposed to be entered upon in this communication.

The experiment that has been made in the completion of three-fourths of a mile on the Buffalo road, have been favorable in the results; and in the experiments of loaded cars on the track, a favorable effect was noticed by reason of the continued bearing and direct connection with the grade, particularly on a part of the grade that was loose clean sand, which, from its confined position, had the apparent effect of a stone foundation: the grade receiving all of the action of a moving heavy body.

If these remarks should contribute to useful inquiry, and an improvement made in the form of construction, adapted to the age and circumstances of our country, where capital bears a high rate of interest, and the present limited business of different sections not warranting expensive constructions, would be all that could be expected from these imperfect remarks.

ELISHA JOHNSON, Civil Engineer.

Rochester, Jan. 24, 1834.

Report of the Committee on the Affairs of the Saratoga and Schenectady Railroad. Presented 4th December, 1833.

[Continued from page 51.]

There being no farther occasion for an engineer of the Road, the services of the person heretofore filling that office have been dispensed with; a saving of the salary of $1500 per annum is thereby effected. It is believed that, by establishing a carpenter's and blacksmith's shop at one of the stations of the line of road, and employing a skilful workman in each department, by the year, whose duty it shall be to attend to all the repairs of the Company's wagons. the laying of timbere on the Road, shoeing horses, &c., a great saving will result to the Company, and facilitate the operations of the Road. Heretofore the work has been done at different places, and the highest prices uniformly paid. The Committee are strongly impressed with the necessity of making such an arrangement, and thereby securing the advantages of having at all times the necessary hands to conduct the business of the Road.

The Committee, after having very carefully examined into the relative expense and advantages of steam and horse power, are fully convinced that the former is to be preferred, both as it regards economy and usefulness.

The engine now owned by the Company was constructed by Messrs. George Stephenson & Co., of Newcastle, England, and put in operation on the Road on the 2d July last. Its performance has given entire satisfaction. The Committee, viewing the importance of procuring another locomotive engine, and that any longer delay would be detrimental to the interests of the Company, have already ordered one from England, and availed themselves of the services of Mr. John Hampson, the Company's engineer of the locomotive, who embarked for Liverpool on the 1st instant, in order to examine the various improvements in this branch of business. He will suggest to the manufacturers some slight alterations from the one already in use; submitting it, however, to the better judgment of Messrs. S. & Co. to adopt such suggestion or not, as they may deem expedient.

The expediency of laying down turn-outs, each about 100 feet in length, was a subject to which the attention of the Committee was directed. From estimates made, it appears that a turn-out of 150 feet will cost about $80, as the materials are already at hand. After a careful survey of the whole line of Road, the Committee have come to the conclusion that it will be expedient, in addition to those already laid, to establish them at the following points, viz.

1st. At a distance of about 3 miles south of Saratoga Springs.

2d. Two miles south of Ballston Spa.

3d. At some convenient point between Schenectady and what is termed the "Half-way House."

Independent of the convenience those would afford to cars coming in opposite directions, they would also be found useful as stations for loading and unloading freight cars, either with materials for the use of the Road, or merchandize, wool, &c. to and from the adjacent neighbo hood.

Although it is believed that the Company are furnished with sufficient horse and steam power to extend their freight business to the amount of exports and imports already mentaoned in another part of the Report, yet as the present number of wagons can only conveniently transport from 10 to 12,000 tons, they would suggest the expediency of adding 12 more; making, in the aggregate, 30 wagons. As respects the passenger cars, it is believed that the present number will be sufficient, making due allowance for the anticipated increase of travel the next season.

The business of the Road has yielded, from the opening up to this date, as will be seen in the Appendix, the gross amount of $42,666 79. The expenses in conducting its operations during the same period, have amounted to $16,990 92; leaving a net profit of $25,675 89: to which is to be added the sum of $811 50 premium on the sale of stock made last April, making the sum of $26,487 37. From this amount, the sum of $14,250 was paid last September, being 5 per cent. on the capital, to stockholders, for the first regular dividend declared in August, leaving at this time a clear profit of $12,237 37; to which may be added $2,200, a moderate estimate for net proceeds for December and January: there will then be applicable for the next semi-annual dividend in February, the sum of $14,437 37.

The Committee, taking into view the increase of business, and the ample means of the Company to carry into effect the arrangements recently completed for next season, and also the improvements in various branches ot the administration of its affairs, together with the impulse given to the village of Saratoga, evinced by the erection of buildings for the farther accommodation of visiters, are of opinion that the gross income to be derived from passengers may be estimated, for the ensuing year, it $50,000, and the freight at $15,000; from which deduct, for ordinary expenses, $6,000, and $3,000 for repairs, together 19,000, will leave the net proceeds of $46,000.

In making this calculation, it is confidently believed the resources of the Company are not exaggerated; and a general calamity only, by which all public incorporations of this nature must suffer, can curtail the receipts. It may be farther remarked, that the past season was unpropitious, on account of the coolness of the summer; and the great number of visiters to the Springs is to be attributed mainly to the safety, facility, and expedition, afforded by the railroads.

It appears that the number of passengers that have travelled over the Road, since the opening of the same to the 30th November, 1833, amount to 53,018; but the Committee have not been able to ascertain the proportion that have passed to and from the several points on the Road, nor have they been able to distinguish the number that have gone for the purpose of visiting the Springs from the business travel.

As the Committee have adopted a system of collection, with regular checks from one point to another, they will be able hereafter to satisfy stockholders in this particular. They are, however, fully convinced, that the receipts for the business travel, with the receipts from

freight, will secure to stockholders, without calculating on the summer travel to the Springs, a fair income for their investment. Although public notices of the permanent operations of the Road were only given in the North and West late in October last, the increase of business travel has been great. By the comparative view taken in the Appendix F, the business carried on in October and November last year and this present year, in which months there is no pleasure travelling, it will be seen by the returns of October, last year, that $889 96 were received; in the month of November, $483 44 were received: and that in October of the present year $1,574 89 were received; and in November, $1,704 25. The present month of December promises yet better results. The Committee, therefore, in advancing their opinions of the future prospects of the Company, have founded their calculations upon positive data. This improved state of things may be ascribed, in a great degree, to the recent arrangements, and the regular system introduced for conducting the operations of the road, and proper publicity having been given to such arrangements

The Committee, after examining the several statements exhibited by agents, for construction of the Road, have found that, according thereto, it appears that $297,237 have been expended; and that a farther expenditure is required of $11,820, making a total of $309,057; from which is to be deduced $6,541 27, for property the Company have on hand, at present useless, and which has been already paid for; leaving the sum of $17,515 73 more than the present capital.

No part of this amount, which, in the opinion of your Committee, is required to place the Company in the attitude of carrying the general operations of the Road on the most extensive scale, and in the most successful manner, will be wanted until the ensuing spring and summer. To provide for this sum, whenever it becomes necessary, the Committee suggest two modes: one, the increase of capital to the extent already authorized and provided for by the charter: in this case, the Committee recommend to distribute the same among the stockholders, in the ratio of the stock they represent. The other mode is, to resort to a temporary loan. The latter mode, with deference to the opinion of the Board, is recommended by your Committee; as a loan for this small sum could be easily obtained on the most favorable terms, payable by instalments out of the abundant means of the Company.

In conclusion, the Committee would briefly remark, that during the progress of their investigation, they have acted under a sense of the importance of the duties devolved upon them. If they have succeeded in placing the affairs of the Company in their true light, and contributed in any degree to secure the interests of stockholders, they will feel a rich and ample reward.

JOHN B. LASALA, HENRY H. LAWRENCE, } of New York.
JOHN TOWNSEND, of Albany.

New-York, December 4th, 1833.

Total amount of moneys expended in the construction of the road, purchase of lands, locomotive engine, cars, waggons, horses, and all the various items of property belonging to the Company, appears by the abstracts furnished to the Committee to be . . $297,237 00

The amount of unsettled claims against the Company, (which are yet to be substantiated before they are paid,) is estimated not to exceed . . $2,000 00

Cost of an additional locomotive engine, . 5,500 00

Twelve additional waggons, to extend the transportation of merchandize, produce, &c. . . 3,000 00

Four turn-outs to be constructed on several points of the road, the materials being on hand, will not cost above $80 each . . 320 00

Two shops for blacksmith's and carpenter's work 1,000 00

11,320 00

309,057 00

Capital 285,000 00

24,057 00

The Company have the following property to dispose of, which is now useless, viz. mansion house and lot at Ballston Spa, taken to avoid paying heavy damages, which cost the Company $3400 . 2,700 00

5,000 stone blocks, and 1,000 cubic yards rubble stone; estimated . 2,250 00

House and Furniture at the junction of Mohawk Railroad, which cost the Company $1,250 . 750 00

Drawback to be received from U. States for Railroad iron . . . 344 88

Due to the Company for iron plates and Railroad iron 246 39

A quantity of pine wood 250 00

6,541 27

Amount that will be required above the *present* capital of $285,000 to place the establishment on the footing recommended by the Committee, . . . $17,515 73

ESTIMATE FOR KEEPING THE ROAD IN ORDER, PER ANNUM.

Six steady laborers, at $25 per month, ...	$1,800 00
Barrows, spades, picks, &c. .	50 00
Two horses, with rubble wagon to convey stone, slate, earth, &c. .	200 00
One man to drive wagon, . .	300 00
Timber and iron to repair rails, .	650 00
	$3,000 00

Saratoga Springs, Oct. 29, 1833.

The subscriber, at the request of the Committee of the Saratoga and Schenectady Railroad Company, has examined the mason work on the whole line of Road. The following is the result of his observations:

The walls at Schenectady are in good condition, and may stand for several years, with the exception of about thirty feet, between the second and third street bridges, from Railroad office, which stands in need of some repairs, the cost of which will not exceed the sum of twenty-five dollars.

The culvert at Saunders's Flats, now rebuilding, can be completed in two or three weeks; from the plan on which it is now constructing, it will be a permanent and substantial work. The temporary support of the Road at that place will answer the Company for the transportation of passengers and freight, during the construction of the culvert, and longer if it were necessary.

The mason work at the Kayaderosseras bridge is executed in a good and substantial manner, and the bridge itself is well braced, and abundantly strong for all the purposes of the road.

All the other culverts and drains on the line of Road appear to have been well built, and are now in good order and condition.

All which is respectfully submitted,

JAMES VANDENBURGH.

Exhibit of the Operations of the Saratoga and Schenectady Railroad, since its opening, 12th July, 1832, up to 30th November, 1833.

	1832. Number of Passengers.	1832. Amount of Expenditures.	1832. Receipts for Passengers.	1833. Number of Passengers.	1833. Amount of Expenditures.	1833. Receipts for Passengers.	1833. Receipts for Freight.	1833. Total.	Increase.
January,				457	$486 "	$345 82	$205 30	$551 12	
February,				208	713 21	161 06	49 07	210 13	
March,				376	838 46	301 38	42 47	343 85	
April,				1165	822 56	1007 33	165 39	1172 72	
May,				2385	915 64	1709 04	190 72	1899 76	
June,				4541	1113 50	3343 92	358 06	3701 98	
July,				11759	1667 50	8486 78	414 35	8901 13	
August,				14464	2153 05	10192 96	396 97	10589 93	
September,	10322	$4989 58	$548 65	4137	1378 33	3226 60	375 49	3602 29	
October,			3219 64	1756	937 "	1357 04	217 85	1574 89	
November,			1446 34	1453	976 "	1076 "	628 25	1704 25	
December,			889 96						
			483 44						
			951 71						
	10322	$4989 58	$7539 74	42696	$12001 34	$31208 13	$3043 92	$34252 05	$19784 46

Recapitulation.

Number of Passengers that travelled on the Road from 12th July up to 31st December, 1832, ...		10322
Do. do. from 1st January up to 30th November, 1833, ...		42696
Total, ...		53018
Amount received for passengers in 1832, from 12th July up to 31st December, ...	$7539 74	
Do. do. in 1833, from 1st January up to 30th December, ...	31208 13	
Do. do. for freight, ...	3043 92	
Amount due to the Company, for freight previous to the 1st November, to be collected, ...	350 00	
Amount to be received from U. S., for carrying the mail in 1833, due 1st January next, ...	525 00	
Gains on the sales of Stock in April, 1833, ...	811 50	
	$43478 29	
Total expenditures for conducting the operations of the Road . .	$16990 92	
Net profits, ...		26487 37
Paid to the Stockholders in September, 1833, the first regular dividend, 5 per cent. on the capital, .		14250 00
Balance		12237 37
Estimate of net profits (chiefly from freight) in December and January,		2200 00
There will be on the 1st February,		

towards the second regular semi-annual dividend, - - - - - $14437 37

Note.—By looking at the above dates, it will be perceived that the receipts of the Company, for the months of July, August, September, October, November, and December, 1832, exceed the disbursements by $2550 16, and that the receipts of the Road for the months of January, February, and March, of this present year, fell short of the disbursements for that period, by $932 57, so that deducting this last amount from the profits on the 31st December, 1832, those profits are reduced at the end of March, 1833, to $1617 59, or about half of one per cent. on the capital; so that all the profits of the Road, with the exception of this $1617 59, have been made since 1st April, of the present year, 1833.

THE GENESEE AND ALLEGANY CANAL.

[Continued from page 53.]

To the Honorable Canal Commissioners of the State of New-York.

GENTLEMEN—

Agreeably to a request communicated to me by the Hon. William C. Bouck, I have examined three of the canal routes authorized to be surveyed by an act of the legislature of the winter of 1825, to wit: One from Portland, Chatauque county, to the head of the Chatauque lake; one from Lake Erie to Allegany river, through the valley of the Conawango; one from Scottsville, by the way of Le Roy, to the upper falls of the Genesee river; and also a part of the route from Rochester to Allegany at Olean, through the valley of Genesee river. These I shall take up in the order in which they are mentioned.

1. Route from Portland to the head of Chatauque lake. I arrived at Portland on the 20th of September. The harbor here is of considerable importance, as it is becoming a principal landing place, not only for the goods which are consumed in its immediate neighborhood, but also for much of the merchandize that is designed to go down the Allegany river. It is situated on lake Erie, in Chatauque county, about sixty miles above Buffalo, and is formed on the west by a bar of sand and gravel, which extends into the lake about eighty rods, and upon which a pier and store house are already erected. From this point, the bar turns at an angle of about ninety degrees, and takes an easterly direction until it meets the shore, leaving a space or entrance of about one hundred feet in width, a short distance east of the angular point, as is represented in the subjoined map and plan.

A pier of proper height commenced at this opening and opposite the one on the west side and extending in an easterly direction along the bar seventy-two rods, thence turning at an angle of about eighty degrees and running to the shore, would make a very commodious and cheap harbor, giving an area of six hundred and sixty square rods of six and a half feet water, and an area of two thousand seven hundred and seventy-two square rods of three and a half feet water. After a cursory examination of the country between Lake Erie and Chatauque, I judged the route to be practicable, and commenced taking levels at the harbor, and proceeded to the last mentioned lake. The difference of elevation between the two is 723.9 feet, which is the amount of lockage on this route. The distance between the two points in about ten and a quarter miles, the first seven and a half of which are remarkably favorable: the surface of the ground is very smooth and regular, the soil an easy sandy loam, and the grubbing and clearing light. The remaining distance will be a deep and expansive cut through a ridge, rising in the distance of twenty one chains to fifty-two feet above our level; thence gradually descending to the level again, in the distance of one hundred and ninety-nine chains, making an average cutting of twenty-six feet. The soil is a clayey loam, and there are no indications of rock even in the bottoms of deep wells; and as a further proof of this, we found no rock in the ravine formed by the Little Chatauque, which winds round the foot of this ridge, and which within two miles is at least two hundred feet below our level.

This route must be supplied with water from the Chatauque lake, which I think will be adequate. I gauged its outlet on the 3d of October last, during a very severe drought, and it then furnished 2295 cubic feet of water in a minute.

Estimate of expenses.

7½ miles at $4000, including contingencies, . .	$30,000 00
2¾ miles deep cutting, at $114-322, - -	314,385 00
724 feet lockage. (timber locks,) at $75 per foot, -	54,300 00
	$398,685 00

Second Route from Lake Erie to Allegany, through the Valley of the Conawango.

I commenced taking levels at the head of the first rapid on the Chatauque* outlet, near the village of Jamestown, and proceeded down its valley to Warren on the Allegany river. This outlet is remarkably serpentine, but as the flats are wide, the canal will not require to follow its windings, but may be carried across from bend to bend, as designated on the subjoined map.

The distance, as we collected it from maps of actual surveys, is about twenty-four miles, and the whole descent is one hundred and thirty-two feet. We found no obstructions in this route, with the exception of about three-fourths of a mile of steep banks; but as these are not high or rocky, and the soil an easy loam, we did not consider them formidable.

About four and a half miles of this distance, from the heads of the first rapids, where we commenced taking levels, must principally be fed by the waters of the outlet, taken directly from this point; below which the Cassadaga and several other streams come in sufficient for a supply.

By using wood for locks, the whole expense of constructing a canal down this valley, including these and every contingency, will not much exceed three thousand five hundred dollars per mile, as will be seen by the following estimate:

Grubbing and clearing 24 miles, at $400 per mile, -	$9,600 00
Excavating 4 feet deep, $2,124 per mile, - - -	50,976 00
Lockage 132 feet, $75 per foot, average cost per mile $412.50,	9,900 00
Contingencies at $564 per mile,	13,536 00
	$84.012 00

On our return from these examinations, we commenced at the mouth of the Conawango, where it comes into the Chatauque outlet, and run a level up to its source, making the summit at this place only six feet higher than the Chatauque lake. We had been led to believe that we should find a sufficiency of water here to supply this level and the locks, as far as Cattaraugus creek, and also down the Conawango as far as necessary: but in this we were disappointed.

The streams in this quarter, during the dry season of the year, furnish very little water, and cannot therefore be depended upon. We ran a level to the south branch of the Cattaraugus, with a view of ascertaining the practicability of bringing it in as a feeder; but it was too low, and there was no longer any hope of finding water on this summit, except by the way of Chatauque outlet, which I was satisfied could be easily effected, by maintaining the level along the south side of the ridge between Lake Erie and the valley of the Conawango, in a westerly direction, until it terminated at the point proposed, as delineated on the map.

* Chatauque lake, as I was informed by Mr. William Peacock, agent for the Holland land company, contains by actual survey 16,000 acres, and is 18 miles in length. The depth in its middle will not vary from 30 to 100 feet. I gauged its outlet on the 3d day of October last, during a severe drought, and it then furnished 2295 cubic feet of water in a minute.

Besides the water which would be here supplied for the use of this level and the lockage, from the summit at the head of the Conawango to Cattaraugus creek, (say 470 feet,) we shall be able to command several other considerable feeders, amongst which are Cherry and Clear creeks; the one furnishing about four hundred and the other about six hundred cubic feet of water per minute, even in the driest times.

The route, so far as I am able to judge from actual observation, and from the concurrent information of several intelligent persons, I have no hesitation in saying is practicable, and a considerable part of it favorable. The soil is easy, and unencumbered with rock: there will be no deep cutting, and but one considerable embankment, which will be at the Cassadaga outlet.

We did not run a level so as to ascertain where it would be necessary to cross the stream, and could not therefore determine as to the cost, but presume it would not vary much from $15,000, including the culvert.

The other expenses may safely be put at $4,500 per mile.

Distance 30 miles; amount of expense, - -	$135,000
Embankment and culvert, -	15,000
	$150,000

The face of the country from the summit at the head of the Conawango to Cattaraugus creek, is considerably cut up with ravines; but as they generally run parallel with the line which we wish to pursue, (especially if the southern summit be adopted, which we also examined, and which is probably the best of the two,) no very important inconvenience will be sustained on account of them, and we shall be enabled to choose our ground, in reference to the most direct and feasible route. The expense upon this part of the line, exclusive of lockage, may very properly be compared with that last above mentioned, except in relation to the culvert and embankment of Cassadaga creek.

Distance 5 miles, at $4,500 per mile, -	$22,500
Lockage, 474 feet, at $75 per foot, -	35,550
	$58,050

I assume 474 feet of lockage at this place, knowing that the whole amount is 724 feet, and believing, from information, that the bed of the creek at Lodi is 250 feet above the surface of the lake. As the ground will be equally as favorable, or nearly so, and materials for the construction of locks as convenient, no great difference of expense will grow out of any error which may be committed in this calculation.

The point at which the Cattaraugus* can be most conveniently crossed, I think, is at Lodi: and this can best be effected by means of a dam. From this point we can easily wind out of its valley, and command its waters, which are amply sufficient to feed towards Buffalo.

Between the summit at the head of the Conawango and Buffalo, I did not deem it expedient to take any levels, as we had already ascertained the heights of the summits and the amount of lockage.

In proceeding from Lodi to Buffalo, we pass down upon the flats of Cattaraugus creek, which are often extensive, and always wide enough for the passage of the canal without any extra expense. In the distance of about six miles, we wind completely out of its valley on to the bank of the lake, which descends very gradually, and presents an even, regular surface. This continues all the way to Buffalo, with the exception of two ravines, one formed by the Eighteen-mile creek, the other by Clear creek, which must be passed by culverts and embankments with considerable expense. This, however, will not exceed, in my opinion, $20,000 at each place. The excavation simply on this portion of the line will not cost above $1900 per mile; but as there will be more culverts, bridges and embankments, here than on any preceding portion, I think the expense, exclusive of lockage and the two heavy embankments, may be estimated at $5000 per mile.

Distance 30 miles, at $5000 per mile,	$150,000
Two culverts and embankments, at $20,000 each, - -	40,000
Lockage 250 feet, at $75 per foot, .	18,750
Dam at Lodi, - - -	2,500
	$211,250

* This is a large and durable stream, and at all seasons of the year will afford not less than 5000 cubic feet of water in a minute.

Third Route from Scottsville, by the way of Le Roy, to the Upper Falls of the Genesee River.

In regard to this route, it must be observed that it pursues the same course, passes the same summit, and depends upon the same streams that the Genesee river route does, until it unites with the river. And as this summit and these streams were examined by Mr. Geddes last summer, I did not extend my examinations further up than Raymond's mill dam, a little above the mouth of Black creek, in the township of Belfast, Allegany county.

From this point it was proposed by the advocates of the route to begin to wind out of the valley of the Genesee river, maintaining the same level along its banks, so as to use its waters for the canal, and finally to gain such an elevation as to cross over the summit at the head of Allen's creek, thence to run down the valley of this creek to the river again, and so to the Erie canal at Rochester.

I was induced to believe, from a bird's-eye view of the country, and also from some rough levels which had been taken by the inhabitants of Warsaw, that the summit was low, and that if the banks of the river were favorable, we should find no difficulty to contend with. We accordingly commenced our level, and run down about six miles, but in this distance we found many obstacles. The bank was extremely broken; steep, high points of ridges running quite to the river, with wide flats between, receding far back, and so low as to require heavy embankments; and in the rear of these flats we often saw deep ravines, that appeared to have been worn out of the rock by violent floods, which indicated the necessity of large and expensive culverts.

After spending several days in this quarter, and finding that every step we advanced presented more and more difficulties, we resolved to abandon this project so far as related to this part of the route, and to go further down the river, hoping to find a place where the water could be taken out with less inconvenience.

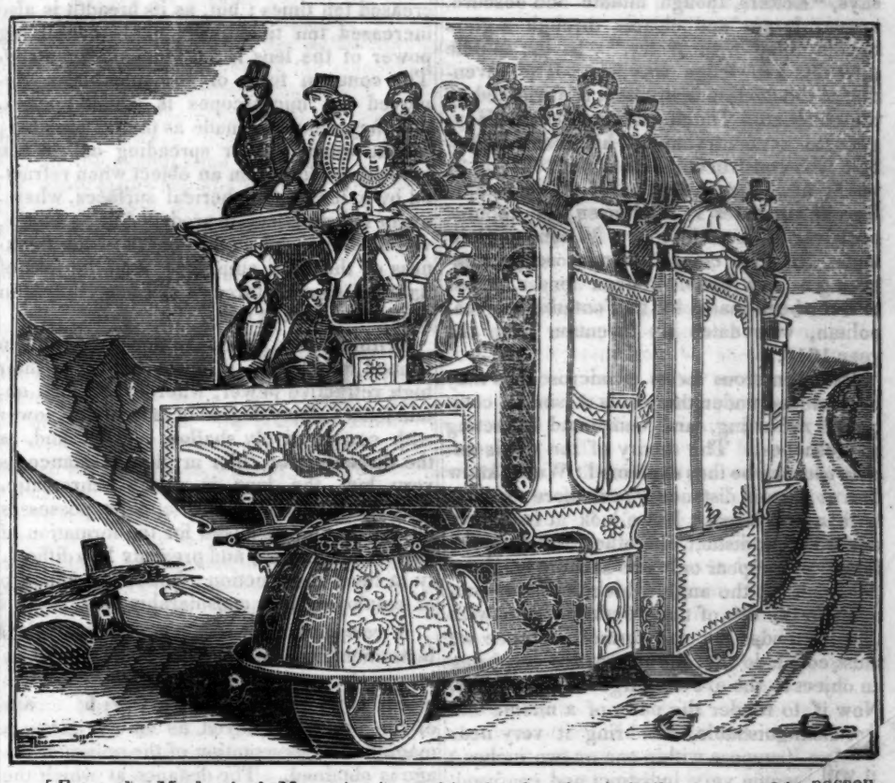
The mouth of Cole creek appearing most favorable to this place, we commenced here and ran down as far as Wiscoy creek, near where it enters into the river, having descended about 30 feet. At this place we learned from the inhabitants that this stream had a perpendicular fall in it of fifty feet, within a mile of its mouth, and that it was very rapid all the way to its source.

From these circumstances, and perceiving that it arose near the head of Allen's creek, I concluded that the summit must be much higher than we had at first supposed. I therefore went directly to it and run a level to the river, which decided the question at once, by proving that it was too high even for our first level, and that to bring the river across it, it would be necessary to go as high at least as Angelica, which is seven miles above the mouth of Black creek. We came at this conclusion by knowing that the descent in the river did not vary much from eight feet in a mile. We therefore abandoned this route, and proceeded to the Canasaraga and Cushequa.

(To be continued.)

STOCKS OF GREAT BRITAIN.—It is a subject of some interest to be acquainted with the different Canal, Railway, Water-Works, Bridges, Mining, and other Stocks in England, and the amount of Dividend paid. We have, therefore, collected the sum from the London Price Currents embracing, as we believe, the whole.—[Dai. Adv.[

	Number of Shares.	Price. First.	Present.	Div'd p.ann.
CANALS.				
Ashton and Oldham	1,766¼	97½	150	6
Ashby-de la-Zonch	1,482	113	74	4
Barnsley	720	160	290	13
Brecknock & Abergay	1,005	150	85	4
Birmingham ½ share	4,000	17½	..	12½
Birming. & Liv. Junc.	4,000	100	36	..
Bolton & Bury	472	250	105	6
Bridgewater and Taunton	600	100	70	..
Chelmer and Blackw.	400	100	102	5
Coventry	500	100	610	32
Croydon	4,545	31½	1½	..
Dudley	2,060¼	100	60	2½
Ellesmere & Chester	3,575¼	133	80	3¾
Forth and Clyde	1,297	400¼	500	25
Grand Junction	11,600	100	241	12
Grand Union	2,849¼	100	23	1
Grand Surrey	1,500	100	25	..
Grand Debentures	120,000	100	..	5 p. c.
Grand Western	3,096	97	17½	..
Glamorganshire	600	172¾	290	13½
Grantham	749	150	202	10
Huddersfield	6,239	57½	32a½	1
Kennet and Avon	25,328	39½	28½	1½
Lancaster	11,699½	47½	27	1
Leeds & Liverpool	2,879¾	100	452½	20
Leicester	540	140	185	13
Leicester & Northam	1,897	83¾	82	4
Loughborough	70	142¾	1820	..
Macclesfield	3,000	100	49	..
Monmouthshire	2,409	100	..	10
Montgomeryshire	711	100	86	4
Melton Mowbray	250	100	190	9
Mersey and Irwell	500	...	720	40
Oxford	1,786	100	5	3¾
Peak Forest	2,400	78	71	3
Portsmouth and Arundel	2,520	50	..	..
Ditto New	2,000	25	..	..
Regent's	21,418	33½	17	13s 6d
Rochdale	5,669	85	..	4½
Shropshire	500	100	136	7½
Somerset Coal	800	150	..	10
Ditto Lock Fund	3,600	12½	13	6½c
Staffords. and Worcesters.	700	140	600	34
Shrewsbury	500	125	255	11
Stourbridge	300	145	200	8
Stratford on Avon	3,647	79½	3½	1½
Stroudwater	200	150	525	24
Swansea	533	100	220	11
Thames and Severn, blk.	1,300	100	27a8	1½
Do. do. red	1,150	100	33	1½
Trent and Mersey, ½ sh.	2,600	50	660	37½
Thames and Medway	8,149	19½	¾	..
Warwick and Birming.	1,000½	100	230	16
Warwick and Napton	980	100	210	12
Worcester and Birming.	6,000	73¾	87½	4
Wilts and Berks.	20,000	16¾	5½	5s
Wyrley & Essington	800	125	115	6l
Wey. and Arun.	905	110	22½	1
RAILWAYS.				
Clarence (Durham)	2,000	100	100	..
Forest of Dean	2,500	50	25	1l 2s
London and Greenwich	20,000	4	4	..
Leicester & Swannington	1,500	50	57l	..
Liverpool & Manchester	5,100	100	210	8l 4pc
Ditto	5 100½	25	51½	"
Ditto	6,375½	25	51	"
London and Birmingham	25,000	5	13¼14	.
Severn and Wye	3,762	35	16½	¾
Stockton and Darling.	1,000	106½	297½	8
Warring. and Newton	548	....	....	..
Wigan Branch	650	....	....	..
WATER WORKS.				
Birmingham	4,453	24	25½	..
East London	4,433	100	195	5
Grand Junction	5,500	Av 42¾	53½	2½
Manchester and Salford	6,436	30	44	1
BRIDGES AND DOCKS.				
Waterloo Bridge	5,000	100	3	..
Do. Old Ann. 8£ p an	5,000	60	23½	13s3d
Do. New do. 7£ do.	5,000	40	20½	16s4d
Do. [Bonds] var. am.	£50,000	va. am.	..	5l p.c.
Commercial Docks	2,600 and 1,065½ sh	100	67	4 p.c.
East India	433,750	stock	43	4 p.c.
London	3,114,000	do.	55a6	3 do.
St. Katherine	1,352,753	do.	....	3 do.
MINES.				
West India	1,330,000	do.	94	5 do.
Real del Monte	1,000	65	5½3n4½	.
Bolanos	2,000	150	12½a7½	.
Anglo Mexican	10,000	100	11¼n12	.
United Mexican	30,000	40	11½a12½	.
Mexican	5,739	43	10	.
Brazilian	10,000	5	61¼n2½	5
Columbian	8,500	5	8½a¾	.
Mining Co., Ireland	20,000	5	....	.
Penoles (Gold) 12sh	1,020	12	....	.



[*From the Mechanics' Magazine.*]

DR. CHURCH'S STEAM CARRIAGE.—We introduce to the notice of our readers a view of a carriage in actual operation in England, with the following remarks from the London Mechanics' Magazine:

In the able article on "Inland Transport," in the Edinburgh Review, said to have been written by Dr. Lardner, Dr. Church's carriage is spoken of as one of the likeliest to be attended with success.

In the cases of Gurney, Heaton Brothers, and also, I believe, Sir Charles Dance, there is one carriage to carry the engine, and another the passengers. These locomotive machines, in short, are *drags*, merely meant to be used in the same way as Jonathan Hall in the infancy of steam navigation proposed to use steam tugs. Dr. Church, on the contrary, has but one carriage for both machinery and passengers. The one represented in the drawing is built to carry fifty passengers. The wheels are about six inches broad in the tire and eight feet in diameter.

The crank shaft, worked by the cylinders, is connected by endless chains with the axles of the hind wheels of the carriage, and each wheel has a separate axle. The spokes of the wheels are so constructed as to operate like springs to the whole machine—that is, to give and take according to the inequalities of the road. The boiler consists of a series of double tubes, one within the other, placed in a vertical position around a circular fire-place, and communicating with it; the heated air passes through these tubes, which are every where surrounded with water. The tubes are in the form of syphons, to counteract the injurious effects of unequal expansion. The draught is produced by a fanner worked by the engine, and the furnace is made to consume its own smoke.

In conclusion, I have only to add, that, if there be any thing to boast of in the patronage and support of a public company, Dr. Church has more to say for himself in this respect than the Messrs. Heaton; for whereas they have but very late issued proposals for such a company, while it is a considerable time since a company was actually formed for the purpose of working Dr. Church's carriages, not only on the road between London and Birmingham, but between Birmingham, Manchester, and Liverpool.

I remain, sir, your obedient servant,

IMPARTIAL.

Birmingham, Oct. 3, 1833.

On the Microscope—Method of Constructing, &c. [From Partington's British Cyclopædia.]

The history of this instrument is veiled in considerable obscurity, and among the moderns the discovery of the microscope has been claimed by several individuals. The ancients appear to have been acquainted with it in one of its forms; for Seneca says, "Letters, though minute and obscure, appear larger and clearer through a glass bubble filled with water." In the middle ages this knowledge was lost. The invention of the modern instrument is attributed by the celebrated Dutch mathematician, Huygens, to a countryman of his, named Drebell, who constructed them about 1621, or 31 years after the invention of the telescope. Borelli attributes it to Jansen, the reputed contriver of the telescope; Viviani to Galileo. The first compound microscope, consisting of two double convex lenses, seems to have been made by F. Fontana, a Neapolitan, who dates his invention from the year 1618.

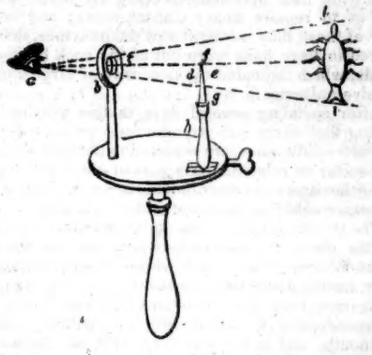
The numerous forms of microscopes may be included under the heads of single, compound refracting, and compound reflecting microscopes. The theory of the *single microscope* may be thus explained: We all know that at a small distance we see more distinctly than at a large. If we look at two men, one 200 feet distant, the other 100 feet, the former will appear only one half the height of the latter, or the angle which the latter subtends to the eye of the observer will be twice that subtended by the former. Hence we must conclude that the nearer we can bring an object to the eye the larger it will appear. Now if, to render the parts of a minute object distinguishable, we bring it very near the eye, (suppose within one or two inches,) it will become very indistinct and confused, in consequence of the great divergence of the rays of light from the object, and the power of the crystalline lens of the eye not being sufficient to collect the rays whereby an image of the object may be formed on the retina at the proper distance on the back of the eye. Now, if we employ a single microscope, which consists of a convex lens, usually made of glass, (though any other transparent substance would have the same power in a greater or less degree,) and mounted in a brass setting, and place it between the object and the eye, the former being in the focus of the glass, the diverging rays from the object will be refracted and rendered parallel by the lens, and thus we shall obtain a distinct and near view of the object. The increase of apparent magnitude obtained by the employment of lenses is proportioned to the difference of the distance of an object from the lens and the distance when seen without its assistance. This latter distance, (the distance of distinct vision of minute objects with the naked eye,) varies in different persons, and at different periods of life. Some measure, therefore, must be assumed as a standard, before we can express the amplifying power of a lens, so as mutually to have the same idea of the magnitude of an object. Some authors adopt ten inches as the standard of the focus of the eye, under ordinary circumstances, and its decimal character makes it a convenient multiplier or divisor. With this decimal standard we can determine the magnifying power of lenses of any focal length, or formed of any substance (media). Thus, if we have a lens which requires for distinct vision the object to be one inch from its centre, (in a double convex,) we must divide the standard ten by one, which will give ten as the magnifying power. If the lens require the object to be $\frac{1}{25}$ of an inch distant, its magnifying power will be 250. We have called the magnifying power in the first instance ten, because the length of the object is increased ten times; but, as its breadth is also increased ten times, the real magnifying power of the lens is ten times ten, or 100. The common form of the magnifiers employed for microscopes is double convex, and they should be made as thin as possible; for the wandering or spreading out of the rays proceeding from an object when refracted by a lens with spherical surfaces, whereby an indistinctness is produced in its image, will be decreased as the square of the thickness of the lens employed, and the loss of light in passing through the lens is less in proportion as it is thin.

Within a few years diamonds have been formed into lenses in consequence of their high refractive power, whereby we can obtain lenses of any degree of magnifying power with comparatively shallow curves; and, as the dispersion of color in this substance is very low, the lens is nearly achromatic. Next to the diamond the sapphire possesses all the powers requisite for the formation of perfect magnifiers, and presents less difficulty in their construction; hence the expense of employing it is considerably less.

A *compound refracting microscope* is an instrument consisting of two or more convex lenses, by one of which an enlarged image of the object is formed, and then by means of the other, employed as an eye-glass, a magnified representation of the enlarged image is obtained. The distance at which the two lenses of a compound microscope are placed from each other must always exceed the sum of their focal lengths, in order that the image may be formed by the object-glass in the anterior focus of the eye-glass. Compound microscopes have been constructed of almost all possible dimensions, from a few inches in length to twenty feet; but from experience it appears that whenever their magnitude is augmented beyond a certain point the effect is diminished, though we suppose the amplifying power of both microscopes the same.

The *solar microscope* consists of a common microscope connected with a reflector and condenser, the former being used to throw the sun's light on the latter, by which it is condensed to illuminate the object placed in its focus. This object is also in the focus of the microscopic lens on the other side of it, which transmits a magnified image of it to a wall or screen, (sometimes a combination of two magnifying lenses is used.) The magnifying power will be greater in proportion as the focal distance of the object-glass compared with the distance of the wall or screen from the object-glass is less. The principle of the *lucernal microscope* is the same, except that a lamp is used instead of the sun to illuminate the objects; this lamp is enclosed in a lantern, to screen the light from the observers.

Having thus given a general outline of the arrangement of the microscope in its various forms it will now be advisable to furnish our readers with such graphic and descriptive particulars as will enable any ingenious workman, reading this article, in conjunction with our treatise on OPTICS, (which will be inserted hereafter,) to construct the instrument. To render this systematic and intelligible, it may be advisable to commence with the most simple form.



A very convenient form of microscope is shown in the preceding engraving, where *b* is a circular piece of brass or ivory, in the middle of which is a small hole, one-twentieth of an inch diameter: in this hole is fixed, with a wire, a small lens, whose focal distance is *c d*. At that point is placed a pair of pliers, *g h*, which may be adjusted by means of the sliding screw, as in the figure, and opened by means of two little studs. The object may be viewed with the eye placed in the other focus of the lens at *a*; and, according to the focal length of the lens, the object, *f*, will appear more or less magnified, as represented at *i l*. If the focal length be half or one-fourth of an inch, the length, surface, and bulk, of the object will be magnified in a similar proportion. This small instrument may be put into a case for the pocket. Those lenses whose focal lengths are three-tenths, four-tenths, and five-tenths of an inch, are the best for common use.

Since the nearer the eye can approach to an object the larger it appears, it is plain, a double and equally convex lens magnifies more than a plano-convex lens; because, if the sphere or convexity be the same, the focal length of the former is but half that of the latter; and, since the double convex consists of two segments of a sphere, the more an object is to be magnified, the greater must the convexity be, and therefore the smaller the sphere; till at last the utmost degree of magnifying power will require that these segments become hemispheres, and, consequently, the lens will be reduced to a perfect spherule, or very small sphere.

If the radius of the spherule be one-tenth of an inch, the eye will have distinct vision of an object by means thereof, at the distance of $1\frac{1}{2}$ radius, (that is, three-twentieths

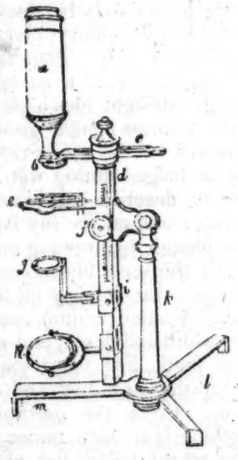
of an inch,) and, as this is but the fortieth part of six inches, the length of an object will be magnified forty times, the surface 1600 times, and the solidity 64,000 times, by such a small sphere.

If the radius of a spherule be but one-twentieth of an inch, then will the eye have distinct vision of an object at the distance of three-fortieths of an inch, and as this is but the eightieth part of six inches, the length of objects will appear eighty times greater, the surface 6400 times, and the bulk 512,000 times greater, to the naked eye at six inches distance.

In using these spherule microscopes, the objects are to be placed in one focus and the eye in the other; and since the focus is so exceedingly near the glass, it is impossible to view any but pellucid bodies; for, if any opaque object were to be applied, the eye being, as it were, just on the spherule, would entirely prevent any light falling on it, and it would be too obscure to be viewed.

To remedy this inconvenience, the focal length should be increased and a concave mirror substituted for the plate *b*. The object, *f*, being placed in the focus of the mirror, is illuminated by reflected light, and the most opaque insect may thus be seen with advantage to the naturalist. If the instrument thus arranged be directed towards the sun, the effect will be very materially improved; and when this cannot be accomplished, a sheet of white paper should be placed beneath the instrument.

The *compound microscope*, as made by Messrs. Jones, of Holborn, is shown in the engraving beneath. The body of the in-

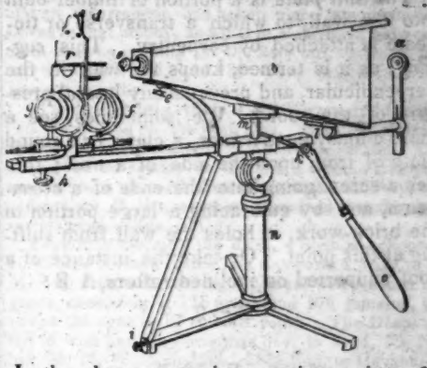


strument, *a*, is screwed to the horizontal sliding arm, *c*. At *b* is a circular plate, containing a series of glasses, varying in their magnifying power. The objects to be magnified are placed in the stage, *e*, and the proper focus obtained by moving the rack at *f d*. The lens *g* is employed to concentrate the light of a lamp, or that of the sun, on the object to be examined. The reflector at *h* has two mirrors, the one concave, the other flat. The whole instrument is supported by the pillar, *k*, and the triangular stand, *l m*.

The great facility with which objects can be represented on paper, or a rough glass, in the camera obscura, and copies drawn from them by any person, though unskilled in drawing, evidently suggested the application of the microscope to this instrument. The greatest number of experiments that appear to have been made with this view, were by Mr. Martin and Mr. Adams, the former of whom frequently applied the microscope to the portable camera, and with much effect. But these instruments being found to answer only with the assistance of the sun, Mr. Adams directed his experiments to the construction of an instrument of more extended utility, which could be equally employed in the day and by night. He accordingly succeeded so far as to produce, by candle-light, the images of objects refracted from a single magnifier, upon one or two large convex lenses (of about five inches, or upwards, in diameter,) at the end of a pyramidal-shaped box, in a very pleasing manner, so as to give opaque objects, as well as transparent ones, the utmost distinctness of representation; but still the light of a candle, or lamp, was found generally insufficient to throw the requisite degree of illumination on the objects. The invention of the Argand lamp offered a complete remedy for this defect, by the intensity and steadiness of its light.

The advantages of this excellently-conceived instrument are numerous and important. "As the far greater part of the objects which surround us are opaque," says Mr. Adams, "and very few are sufficiently transparent to be examined by the common microscopes, an instrument that could be readily applied to the examination of opaque objects has always been a desideratum. Even in the examination of transparent objects, many of the fine and more curious portions are lost, and drowned, as it were, in the light which must be transmitted through them; while different parts of the same object appear only as dark lines or spots, because they are so opaque as not to permit any light to pass through them. These difficulties, as well as many more, are obviated in the lucernal microscopes, by which opaque objects of various sizes may be seen with ease and distinctness, the beautiful colors with which most of them are adorned are rendered more brilliant, without changing in the least the real tint of the color, and the concave and convex parts retain also their proper form. The facility with which all opaque objects are applied to this instrument is another considerable advantage, and almost peculiar to itself: as the texture and configuration of the more tender parts are often hurt by previous preparation, every object may be examined by this instrument first as opaque, and afterwards (if the texture will admit of it) as transparent. The lucernal microscope does not in the least fatigue the eye; the object appears like nature itself, giving ease to the sight and pleasure to the mind: there is also, in the use of this instrument, no occasion to shut the eye which is not directed to the object. A further advantage peculiar to this microscope is that by it the outlines of every object may be taken, even by those who are not accustomed to draw; while those who can draw well will receive great assistance, and execute their work with more accuracy, and in less time, than they would otherwise have been able to have performed it. Transparent objects as well as opaque may be copied in the same manner. The instrument may be used at any time of the day, but the best effect is by night; in which respect it has a superiority over the solar microscope, as that instrument can be used only when the sun shines.

"Transparent objects may be examined with the lucernal microscope in three or four different modes, from a blaze of light almost too great for the eye to bear to that which is perfectly easy to it; and, by the addition of a tin lantern to the apparatus, may be thrown on a screen, and exhibited at one view to a large company, as by the solar microscope."



In the above engraving we give a view of this instrument, mounted to examine opaque objects. *b* is a large mahogany pyramidal box, which forms the body of the microscope; it is supported firmly on the brass pillar, *n*, by means of the socket, *m*, and the curved piece, *e*. *a* is a guide for the eye, in order to direct it in the axis of the lenses; it consists of two brass tubes, *l*, one sliding within the other, and a vertical flat piece, at the top of which is the hole for the eye. The inner tube may be pulled out, or pushed in, to adjust it to the focus of the glasses. The vertical piece may be raised or depressed, that the hole through which the object is to be viewed may coincide with the centre of the field of view; it is moved by a milled screw, which could not be shown in this figure. At *l* is a dove-tailed piece of brass, made to receive the dove-tail at the end of the tubes, by which it is attached to the wooden box. The tubes may be removed from this box occasionally, for the convenience of packing it up in a less compass. At the small end of the cone is placed a tube, which carries the magnifiers, one of which is represented at *c*; the tube may be unscrewed occasionally from the wooden body. Beneath the cone is placed a long square bar, which passes through and carries the stage or frame that holds the objects; this bar may be moved backward or forward, in order to adjust it to the focus, by means of the pinion, *k*. A handle furnished with a universal joint, for more conveniently turning the pinion, is shown at *o*. When the handle is removed a nut may be used in its stead. The stage, *h*, for opaque objects, fits upon the bar by means of a socket, and is brought nearer to or removed further from the magnifying lens by turning the pinion, *k*; the objects are placed in the front side of the stage. The two upper pieces of brass, *r*, are moveable; they are fixed to a plate, which is acted on by a spiral spring, that presses them down, and confines the slider with the objects: this plate, and the two upper pieces of brass, are lifted up by the small nut, *d*.

At the lower part of the stage there is a semi-circular lump of glass, *g*, which is designed to receive the light from the lamp, and to collect and throw it on the concave mirror, *f*, whence it is reflected on the object. The upper part of the opaque stage takes out, that the stage for transparent objects may be inserted in its place.

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 57.)

Did the reader ever notice how the walls of a house are assisted when thin and overburdened with a roof?

The *wall plate* is a portion of timber built into the wall, to which a transverse or tie-beam is attached by carpentry. This *cogging*, as it is termed, keeps the wall in the perpendicular, and prevents any lateral pressure of the roof.‡ We sometimes see a more clumsy contrivance, a clasp, or a round plate of iron, upon the side of a wall; this has a screw going into the ends of a cross-beam, and by embracing a large portion of the brick-work, it holds the wall from shifting at this point. Or take the instance of a roof supported on inclined rafters, A B:

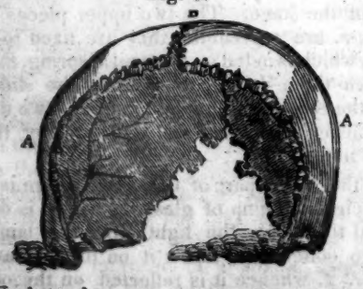
Fig. 2.

Were they thus, without further security, placed upon the walls, the weight would tend to spur or press out the walls, which must be strong and heavy, to support the roof; therefore the skeleton of the roof is made into a *truss*, (for so the whole joined carpentry is called.) The upper cross-beam, marked by the dotted lines C, is a collar-beam, connecting the rafters of the roof, and stiffening them, and making the weight bear perpendicularly upon the walls. When the transverse beam joins the extremities of the rafters, as indicated by the lower outline, D, it is called a *tie-beam*, and is more powerful still in preventing the rafters from pushing out the walls.

Now, when a man bears a burden upon his head, the pressure, or horizontal push, comes upon the lower part of the *parietal bones*, and if they had not a tie-beam, they would in fact be spurred out, and the bones of the head be crushed down. But the temporal bone, D, and still more, the sphenoid bone, E, by running across the base of the skull, and having their edges lapping over the lower part of the great walls, or the parietal bones, lock in the walls as if they had iron plates, and answer the purpose of the tie-beam in the roof, or the iron plate in the walls. But the connection is at the same time so secure, that these bones act equally as a *straining* piece, that is, as a piece of timber, preventing the tendency of the sides *of the skull* to each other.

It may be said, that the skull is not so much like the wall of a house as like the arch of a bridge: let us then consider it in this light.

Fig. 3.



We have here the two parietal bones, separated and resting against each other, so as to form an arch. In the centering, which is the wooden frame for supporting a stone arch while building, there are some principles that are applicable to the head.

We see that the arch formed by the two parietal bones is not a perfect semi-circle; there is a projection at the centre of each bone: the bone is more convex, and thicker at this part.

The cause assigned for this is, that it is the point from which ossification begins, and where it is, therefore, most perfect. But this is to admit a dangerous principle, that the forms of the bones are matter of chance; and thence we are left without a motive for study, and make no endeavor to comprehend the uses of parts. We find that all the parts which are most exposed to injury are thus strengthened: the centre of the forehead, and the projecting point of the skull behind, and the lateral centres of the parietal and frontal bones. The parts of the head which would strike upon the ground when a man falls are the strongest, and the projecting arch of the parietal bone is a protection to the weaker temporal bone.

If we compare the skull to the *centering*, where a bridge is to be built over a navigable river, and consequently where the space must be free in the middle, we find that the scientific workmen are careful, by a transverse beam, to protect the points where the principal thrust will be made in carrying up the masonry. This beam does not act as a tie-beam, but as a straining-piece, preventing the arch from being crushed in at this point.

The necessity of strengthening certain points is well exhibited in the carpentry of

Fig. 4.

roofs. In this figure it is clear that the points A A will receive the pressure of the roof, and if the joining of the puncheons* and rafters be not secure, it will sink down in the form of the dotted line. The workmen would apply braces at these angles to strengthen them.

In the arch, and at the corresponding points of the parietal bones, the object is attained by strengthening these points by increase of their convexity and thickness; and where the workman would support the angles by braces, there are ridges of bone in the calvaria,* or roof of the skull.

If a stone arch fall it must give way in two places at the same time; the centre cannot sink unless that part of the arch which springs from the pier yields; and in all arches, from the imperfect Roman arch to that built upon modern principles, the aim of the architect is to give security to this point.

In the Roman bridges still entire, the arch rises high, with little inclination at the lower part; and in bridges of a more modern date, we see a mass of masonry erected on the pier, sometimes assuming the form of ornament, sometimes of a tower or gateway, but obviously intended at the same time, by the perpendicular load, to resist the horizontal pressure of the arch. If this be omitted in more modern buildings, it is supplied by a finer art, which gives security to the masonry of the pier, (to borrow the terms of anatomy,) by its internal structure.

In what is termed Gothic architecture, we see a flying buttress springing from the outer wall, carried over the roof of the aisle, and abutting against the wall of the upper part, or *clere-story*. From the upright part of this masonry, a pinnacle is raised, which at first appears to be a mere ornament, but which is necessary, by its perpendicular weight, to counteract the horizontal thrust of the arch.

* The puncheons are the upright lateral pieces; the rafters are the timbers which lie oblique, and join the puncheons at A A.

AGRICULTURE, &c.

DRILL MACHINE—IMPORTANT IMPROVEMENT.—Last year Mr. John Geddes, farmer and joiner, Cargen bridge, who some time ago received, from the Highland Society of Scotland, a handsome premium for the best turnip drill-machine now in use, invented an apparatus for sowing and harrowing, which weighs 50 lbs., may be purchased for the same number of shillings, and is so exceedingly handy that it can be attached in five minutes to a common plough, and set in motion to the astonishment of the sheeted seedsman, and his friend the harrower, who foresee in this invention their occupation gone, with the exception of oats, and that too in the course of a few years. In the first instance, our friend drilled a field of barley, at the rate, not of 5, but 1½ bushels of seed per acre, and reared, notwithstanding, a full and fair average crop, and the calculation is that 12 shillings per acre for wheat and 10 shillings for barley may be saved on all the arable land in the country, placed under these descriptions of crop. Something, too, is gained in appearance: a succession of rows beautifully straight has a pleasing effect, and the opinion gains ground, that wheat thus raised will be easier reaped, and less liable to be lodged during wet weather. It is difficult to describe machinery in the absence of cuts; and all we say is, that the weight of the plough, by pressing on a wheel connected with the seed chest, causes it to revolve, and opens the valves with the greatest regularity. A small coulter ruts the soil to the proper width and depth, and no more; and two iron teeth, like the teeth of harrows, cover up the tiny drill, and complete the operation. From the position of the seed-box, nothing is trodden under foot: by reason of the wheel below the plough, the task of the horses is not harder than in ordinary cases, and a man, or even a lad, can plough, sow, and harrow, at the rate of one acre per day, or more. From the great breadth of oats planted, and the necessity which exists of breaking the stubborn glebe during winter, broadcasting this description of crop must still remain the favorite mode of husbandry; while, on the other hand, wheat and barley, from the success of the experiments already made, must, ere long, be drilled almost universally. By modifying the seed-chest and substituting one for another, according to the nature of the operation, potatoes may be planted, and beans and peas sown on the same principle. By means of an index, the quantity of seed required to be sown is regulated with mathematical accuracy, and can be increased or diminished according to circumstances.—[Dumfries Courier.]

[*From the New-York Farmer.*]

Suggestions relative to Farmers' Work for February. By the EDITOR.

Those of our subscribers who have the volume for 1833, will find an article on this subject at page 40. Its perusal may produce some good effect on the mind.

TAKING AN ACCOUNT OF STOCK.—During the last month a great number of the merchants in this city have been busy taking an account of their goods, debts and credits. By this practice they are enabled to ascertain whether they have made a profit or a loss. Let the result be as it may, the information is of much service in regulating their future course. Those farmers who have neglected to follow the example of the merchants should immediately set about it. The effect of taking an account of stock, and of keeping regular books, is very beneficial, causing the farmer to be more economical, more discriminating, more industrious, and more rational in his enjoyments.

MANURE.—Those who are in favor of fermented manure, and those who have greater facilities for carting into the fields in winter, should embrace favorable opportunities to cart it out from the yard, and deposite it in regularly formed heaps, where its juices will not wash away. In this state it will gradually ferment, and by the time it is wanted for use will be in a good condition. Manure should be collected into large heaps in the yard, and every kind of litter, ashes, pomice, &c. should be collected and deposited in alternate layers with the manure. If it is stirredo nce or twice and more litter added, it will be in a fine condition for use in the spring. Those who adopt this practice will find themselves paid in various ways. [See N. Y. Farmer, vol. 6, pages 327, 360.]

CUT HAY AND STRAW.—The advantages in using cut hay for horses, as well as cows and oxen, are the saving of one-third of the expense, and improving the condition of the stock, particularly those in years. [See N. Y. Farmer, vol. 7, pages 6, 11.]

SHEEP AND LAMBS.—But comparatively few farmers may be said to be very successful in sheep husbandry. There must be a cause for this, and every farmer, from public and private considerations, should make both observation and experiment. The inquiry should be made, are they less liable to diseases in summer than in winter and spring? At which season do they obtain food most adapted to their natures? In the season of vegetation they are fond of short, sweet pasture. In winter they generally get long dry hay, and often nothing else. This is sufficient to derange the system—to make the demands on the salival and digestive powers too great. It would seem, therefore, that cut hay, mixed with a little bran, and occasionally salted a little, would be a more natural food. This, together with a few turnips, or other succulent food, would undoubtedly tend to invigorate them, and enable them to bring forth and sustain a more healthy progeny. Good covering, dry, warm, and spacious yards, are important. Some kind of condiment, too, is probably serviceable. [See present number, page 56.]

COWS.—Exposed to cold storms, when we have not an opportunity to stir sufficient to keep up animal heat, the human frame suffers much, and undergoes so great a derangement that death follows, if not soon relieved. When cows are confined in a yard where they do not stir about as they would in a state of nature, they must certainly become greatly chilled, and consequently their appetites and digestive functions must suffer more or less. It seems unnatural that cows thus treated would bring forth healthy, vigorous calves. We are too apt to think that warm houses, thick clothing, and downy beds, were made for man, but the bleak heavens and the pelting storms for our domestic animals.

FREQUENT PLOUGHINGS.—When green crops or manure are turned under, it is evident that they should remain to ferment. If, however, the manure is fermented, it cannot be commingled too much. In an address before the South Carolina Agricultural Society, by Daniel K. Whitaker, we find reference to Mr. Tull's system.

A farmer, in that State, planted a field of Rye of seven acres, which he worked in the following manner. He ploughed one acre of the land; this he re-ploughed and ploughed another acre. He then ploughed the two acres already ploughed and ploughed a third acre, and proceeded in this manner, ploughing continually the land already ploughed, and adding an acre at each successive ploughing, till the whole field was completely ploughed. When this was done, the first acre had received seven ploughings, the second six, the third five, the fourth four, the fifth three, the sixth two, and the seventh one ploughing. He then cast in the grain, and harrowed it in, in the manner usually practised in the Eastern States. The result, as communicated to the Agricultural Society, was, that the product of grain harvested from each respective acre, was in exact proportion to the number of ploughings each acre had received; that which had received seven ploughings producing the most abundant crop, that, which had received six ploughings, the next most abundant crop, and so on to that which had received only one ploughing, which produced the least of all. There is no doubt that by minutely pulverizing and frequently stirring the earth, and stirring it deeply, the product of a field may be greatly increased. But something more than this is necessary for him who would reap a succession of crops, in perpetuity, from the same land. He must give the plant food. He must supply it with a due portion of decayed animal or vegetable manure. It is a mistake to suppose that there is any principle of fertility in the primitive soils whatever, and this was the fatal error that lay at the foundation of Mr. Tull's system. Not all the pulverization which could be effected in the soil by a nine month's constant ploughing, would enable the planter to gather a crop of Cotton from a tract of barren sand.

FERMENTED AND UNFERMENTED MANURES.—Practical Agriculturists, (says Mr. Whitaker,) who have tried both the new and the old, prefer the old method. They find that the unfermented application creates too powerful a stimulus for healthy action in the plant, induces disease, and frequently kills, where it was only intended to nourish.

FOREIGN INTELLIGENCE.

FROM HAVANA, by the ship Moro Castle, we have papers of the 21st ult. They furnish no news. Our boatman, however, reports, upon the authority of a passenger, Capt. Trenor, of the *United States Army* that two days before sailing, he was informed by a merchant of Havana, that the intelligence had been received there from Spain, via Lisbon, that Mexico had called upon Spain to acknowledge her independence, threatening in case of refusal, a declaration of war against Spain. The inhabitants of Havana, it is added, were in great dread lest the Queen shou refuse, and war be the consequence. We see nothing of this in the *Diario*.

Barbadoes papers to Jan. 9th, received by the Savannah Georgian, contain the annexed intelligence, which possesses considerable interest:

Insurrection at Martinique.

BRIDGETOWN, Jan. 6.—By an arrival from Martinique, private letters have come to hand, which state that an insurrection had taken place amongst the slaves in that colony, and that in a skirmish between them and the military on the 24th ult., between 50 and 60 were killed, and 180 taken prisoners, with arms in their hands.

[The French brig Adele, Capt. Barron, at this port, left Martinique on the 29th Dec. Capt. B. informs us that the above account is much exaggerated. The slaves had no agency in the affair. Some free persons of color opposed themselves to the military; but before Capt. B. left, news was received that they had surrendered.—Eds. J. C.]

Yesterday morning the Rosa, a Spanish schooner of 75 tons burden, came into this port, a prize to H. M. brig Despatch, having on board 292 African negroes, consisting of 116 males and 176 females, between the ages of 10 and 18 years. The Despatch fell in with her on Christmas day, in lat 4, 30, N., lon. 39, 16, W., bound, as she stated, to Havana.—On their arrival here, the captives were in excellent health, and seemed quite cheerful and contented.—The Rosa sailed last evening for Havana, under charge of an officer of the Despatch, to abide the decision of the mixed commission, when they will probably be declared free, and apprenticed out to whomsoever proposes for them, and the fortunate captors will be allowed £10 sterling per head for each—that is, provided they ever arrive there, which, from the leaky condition of the Rosa, on leaving this, is very questionable.

Latest from Africa, and Landers' Expedition.

BRIDGETOWN, JAN. 9.—By Captain Ellis, of the barque Boddingtons, which arrived here in distress on Sunday last, 70 days from Fernando Po, we have been politely favored with intelligence from the Coast of Africa, and with a corroboration of some facts which we had previously been made acquainted with. This vessel left Fernando Po on the 28th of October; her cargo consisted principally of palm oil, which, being put up in casks, some of which have proved to be unserviceable, leaked to such an extent as to create alarm for the safety of the vessel, a considerable quantity being pumped out every day. Capt. Ellis, accordingly, about three weeks since, found it necessary to steer for this island, as the nearest port he could fetch. The cargo, we understand, is being landed, for the purpose of the packages being repaired. We are happy to learn by this gentleman, that the health of Mr. Richard Lander, since he joined the steamer up the Niger, has greatly recovered. The Columbine sailed for Liverpool, with a cargo of palm oil, on the same day that the Boddingtons left, having on board as passenger Mr. Laird, one of the proprietors concerned in Landers' expedition. Mr. Laird has proceeded home for the express purpose of taking out another cargo to the interior, as the former goods were not adapted to the trade of the country. The mate of the Columbine, who succeeded to the command on the death of Captain Mitchell, had met with the like fate, had fallen a victim to the pestilence of the climate.—While Capt. Ellis was lying in the Cameroons river, six of the piratical crew belonging to the late schooner Panda, which was blown up, applied to King Agua, saying that they had been wrecked in a vessel bound to his river, and claimed his protection. The Chief believing their tale to be true, received them with kindness.

On the second day, four of them applied to Captain Ellis and expressed their wish to get a passage to Bonny, Calabar, or New Calabar, and asked, if he could devise any means of getting there. Capt. Ellis having no suspicion of them, wrote a note to the sub-superintendent of Fernando Po, then at Bimbia, stating circumstances as they had related them; but the superintendent having been apprised by the Captain of His Majesty's ship Curlew, of the circumstances connected with the capture and the destruction of the Panda, and the escape of the pirates, and a liberty sailor recognizing one of them as a notorious freebooter, they were immediately put in irons; upon which one of them offered to turn King's evidence against the others. A reward had been offered for the apprehension of the Captain of the Pirate, in consequence of which he was taken, and with the other men sent to Sierra Leone for trial.

See Summary, page 76.

NEW-YORK AMERICAN.

FEBRUARY 2—8, 1834.

LITERARY NOTICES.

No. XIII.

SALINE, (*Washtenaw Co., M. T.*) DEC. 7.

I have just spent an hour with Mr. Risden, the Surveyor of a great part of Michigan, at whose public house I am now staying, in talking over the district with which he is familiar, and I shall avail myself of the information thus acquired, in filling up hereafter my notes upon the country. The conversation turning upon the healthfulness of Michigan, there was not one out of several residents present, who did not allow the existence of bilious fevers, and fever and ague in every part of the country; but they spoke of passing through these diseases as merely a slight process of *acclimating*, which in the general health of the country, was hardly to be considered. They asserted too, what I have before heard stated by more than one physician in the Territory, that Michigan is exempt from many of the diseases most fatal to human life at the East. Consumption, for instance, which a reference to the bills of mortality* will show, destroys as many in New York, take year and year together for several in succession, as does the yellow fever in New Orleans, is here unknown. Not only, I am told, do no cases originate here, but many persons from New York are pretended to have been cured of the complaint by coming to reside in Michigan. The most unhealthy points are in the vicinity of milldams, and of marshes, near both of which the settlers take particular pains to "locate." The first for the convenience of grinding and sawing, and near the last for the rich grass they afford with only the trouble of mowing. Health, indeed, is the last thing a settler seems to think of, by the way in which he chooses a site for his house. In a country so abounding with lakes and streams of the purest water, and filled with fish, that you may pass a dozen in a ride of as many miles, you but seldom find a house on their banks; while the purchaser of a new possession neglects alike the tempting looking oak opening, and erects his dwelling in the thick forest, provided only a road or trail passes within three feet of his door. A trail, by the way, I must tell you, is an Indian foot-path, that has been travelled perhaps for centuries, and bears here the same relation to an ordinary road, that a turnpike does to a Rail road in your State. He chooses, in short, the most fertile spot on his acres, in order to have a garden immediately around his house, which he places plump upon the road, in order to have it "more sociable-like, and see folks passing." His garden grows from almost nothing. The first year the hog pen and cow yard occupy the place designed for its commencement. They are moved further from the house the second year, and a few cabbages occupy the place which they have enriched by their temporary situation upon it. They move again on the second year, and the garden, which can now boast of a few currant bushes and a peach tree, expands over the place they have ceased to occupy. And now our settler having built a fine barn, and "got things snug about him," begins to like the look of the woods again, which he has so industriously swept from every spot that can be seen from his door. He shoulders his pick axe, he goes out into the woods, and selecting two of the straightest maple saplings he can find, they are at once disinterred, their heads chopped off to make these tall awkward things look civilized, and the pair of poles thrust into the ground within two feet of his door, are white-washed and called trees.

DEXTER, *Washtenaw Co.*, DEC. 12.

I have been here two or three days; but so occupied in riding about looking at the country, that I have not till now attempted to finish this letter. Far different is the appearance of the cottages here from those described above, as the common residence of new settlers. They build almost altogether in the oak openings; and as the country is now undulating, I have seen some cabins very prettily situated in clumps of oaks, a gun shot from the road, with fields of young wheat extending in every direction around them. The soil, when first turned up, is a kind of yellow gravel, very unpromising in its appearance; but it rapidly undergoes a chemical change, becoming almost black in fields of two years cultivation, and improving every season without the aid of a particle of manure. I have now got among the rolling land, in a region full of lakes and oak openings, of which hitherto I had only a taste. I need hardly say how much more grateful such a country is to my eye, than the level thickly timbered lands about Detroit and Monroe.

I came hither by way of the pretty village of Anne Arbour, which contains, I should think, seven or eight hundred inhabitants, many of whom, I am told, are very respectable English immigrants. I stopped at a farm house, about five miles from here, to dine. A white-headed boy of six or seven years old, was turning a grindstone before the door, while a couple of Indians sharpened their knives. Near them a miserable poney, with his wooden saddle covered with a freshly flayed deer, and a brindle wiry-haired dog, with the head of a wolf and the crest of a boar, skulked around the slaughtered game, and snarled in its protection, when, after dismounting, I approached it. His swarthy masters and myself entered the house together. *Tenepe keen chemowkomow?* ("Where is the white man?") said the oldest of the two to a very pretty Connecticut girl, who had recently followed her husband out to this country. She replied by pointing to him, working at a distance in a field, and the Indians sat down patiently till the farmer entered. The venison was then laid on a table, and a bargaining scene commenced, which lasted full half an hour. *Cau-nee-shin chemocomon.* "No good, white man," said one of the red barterers, turning to me, as the white trader offered him what he thought too little for a whole deer. The bargain was struck, however, before a bystander could interpret the appeal for me. The skin still remained with the Indian, and I was not a little surprized to see produced from it a variety of articles of Indian produce, among which were large cakes of deer's tallow, about the size of an ordinary cheese. These were all traded away in succession, and a small cask produced by the Indian, was filled with whiskey on the spot; and the eldest mounting the poney, they both shook me by the hand, and soon disappeared with their poisonous burden, behind a turning of the road. They were of the Ottawa tribe, well-made men, though slightly built, and with aquiline noses and fine shaped heads, and each when I saw them, had the freest and most graceful step I ever saw, whether on the sod or in the ball-room. How complete was the metamorphosis when I overtook them half an hour afterward in the woods! The eldest, who could not have been more than five-and-thirty, was barely sober enough to guide his horse, and sitting with both arms around the barrel of whiskey on the pommel before him, he reminded me of an engraving of Bacchus in a very vulgar and not very witty book, called Homer Travestie. The Indian gravity which had before been preserved amid all the nervousness incident to a trading operation had now thoroughly deserted him, and toddling from side to side, he muttered a sort of recitative, which combined all the excellencies of the singing and spouting of a civilized toper. His companion, a youth of but seventeen, seemed perfectly sober, and stopping only occasionally to pick up the whip of the fumbling rider, he stepped so lightly by his horse's side, that the leaves scarcely rustled beneath his moccasin. I was somewhat pained, of course, at the exhibition, though I confess I was not a little diverted, while riding along for miles in the silent woods, with such grotesque company. The pedestrian continued as reserved and respectful as ever, but my fellow cavalier, after talking a quantity of gibberish to me, which was of course perfectly unintelligible, seemed to be at last quite angry because I could not understand him; then, after again becoming pacified, he found a new source of vehemence in urging me to "*schwap pusische gun*," (trade my gun, to which he took a great fancy) for his "*papooshe puscocachee*," as he called a colt that followed the forlorn poney on which he rode. I could not help blaming myself, however, for having been so long diverted with the frailties of this hospitable Silenus, when at parting about nightfall where he struck into the forest, he gave me an invitation to his wigwam, 20 miles off, signifying the distance by raising all his fingers twice, at the same time using the words *hohee keen marchee neen wigwam*, (come to my wigwam:) How strangely are we constituted that one should derive amusement in the woods from an exhibition which in a city would only excite pain and disgust. I have never seen a half-intoxicated Indian before without the deepest feelings of commiseration. As for the alleged crime of selling Indians whiskey, it is impossible to prevent it. The love of spirituous liquors is a natural craving of the red man, which is irrepressible, and as such I have heard the most humane and intelligent persons speak of it—people who have passed their lives among the Indians, and have done their best to snatch them from this perdition. The haughtiest Chief will travel a hundred miles for a pint of whiskey, and get drunk the moment he receives it, wheresoever he may be. Providence seems to have designed that this mysterious race should not continue upon the earth, and fate has infused a fatal thirst into their bosoms, which is hastening their doom with fearful celerity. But six years ago and the woods around me were alive with Indians, now they are only traversed by a few such stragglers as these. You may talk of civilizing them—but that too is impossible. You may more easily civilize the stupidest African than the most intelligent Indian—and yet who for a moment would compare the erect port and manly tread, the air, the *blooded*-look of the one, with his keen sagacity and rare instincts, to the misshapen form, the shuffling gait and stupid bearing of the other? Where then lies the difficulty? The African is an imitative animal—the Indian is not. He will copy the form of your weapons, for he has felt their edge, and he will make himself ridiculous by wearing a cocked hat, because he conceives it to be an emblem of authority. Rings and bracelets he may wear, for they recommend him to his own tribe; but the forms and fashions of civilization he despises. The negro furnishes the best raw material for a dandy that can be had: he learns at once how to wear his hat and adjust his shirt collar according to the last mode of the white man. The Indian, if a fop, departs even further than usual from the costume of a European. He comes from nature's hands all that she ever intended him to be—the wild man of the woods. To the fleetness of the deer in traversing the forest, he unites the instinct of the hound in finding his way; and when you add to these the mental gift of a certain wild eloquence, wholly unimprovable by cultivation, you have nearly summed up the intellectual qualifications of the American savage—the genuine child of nature—the untamed—the untamable.

I had a long conversation on this subject yesterday, with a middle aged gentleman of high intelligence and character, for many years settled in the territory, and who has availed himself of unusual opportunities of studying Indian life and manners. We had been all day in a canoe paddled by ourselves, exploring a chain of small lakes in this vicinity; and the perfect stillness of the woods around, while floating at sunset over the transparent water, induced him to remark upon the rapid disappearance of the inhabitants; who, but six years since, when he first visited this part of Michigan, kept their canoes upon every stream in the country. The observation suggested the discussion, already alluded to, upon the feasibility of civilizing the Indians; and he told me a variety of anecdotes about a young chief with an unpronounceable name, whom, on various accounts he had once thought the fittest subject for social life he had ever met with among the aborigines. The conclusion of his relation was so whimsical and strikingly characteristic, that I will finish this letter with the details precisely as I took them down in my note book from the lips of my informant—our canoe, the while, being allowed to float as she listed along the placid bosom of one of those beautiful lakes into which the river Huron expands a few miles from its sources.

"As we came one day to the Indian encampment, Ketche-waun-doug-enink caught me by the hand as usual, with his shrill exclamation of welcome, and my party proceeded at once to pitch our tent near his, before a blazing fire of logs. After affording us what assistance he could, the young chief left us; but in the evening he called in again at our tent, and brought his father and mother, his wife and three sisters with him. They all looked quite solemn, and in his manner, particularly, there was something altogether unusual. Young Ketche-waun-doug-enink had been quite my friend, always appeared glad to see me, and was generally sociable in his way; but now he was grave and reserved, almost to severity. My familiarity with Indian character induced me to suppress every thing like surprize at such an extraordinary change of deportment, and we sat thus, I should think, for at least half an hour. At last the young Indian rose up in a formal way, and taking a position full in the light of the fire, began a speech abounding with gesture and vehemence. The amount of it was this: "Listen, my friend; I see that you are wiser than any

of your white bretheren." ["I must interrupt my story," said my companion, "to remind you that believing that my young Indian friend, who was a fine looking fellow, had some relish for civilization, and half a mind, indeed, to turn white man, I anticipated that some proposition to that effect would be the purport of his speech."] He continued—"I am glad to see that you love the Indians; that you are not ashamed of our mode of life. Let me tell you what I presume you already know, that the life of the white man is one of care and trouble. The Great Spirit has blessed his red children in a peculiar manner. We have no care. We are as Sher-manitou* made us. We have not degenerated, but are still his favorites. You never see a wrinkle on the brow of an Indian. Look, my brother, at the forehead of my old father. It is as smooth as my own, though sixty winters have whitened his head. His days have glided on as undisturbed as the smooth stream before you."—[We were on the banks of the Shiawasse, interrupted the narrator.]—"Do you see, my brother, those pebbles in the bottom of the clear stream as it throws back the light of your fire? It is thus that every thought can be seen that dwells in the mind of the Indian. He has no disguise—no cause for it—the troubles of the white man disturb not the clear stream of his soul. Come with us—share with us the gifts of Sher Manitou—think no more of those distant lands of your childhood where men live but to harrass each other, and gather riches that eat the soul up with care—come—here you will build your wigwam—I will help you—you shall have my sister for your wife—she shall weave your mats, and raise your corn, and dry your venison, which we will kill together in the woods. You have lived long enough a life of wretchedness; come and be happy with us."

I was curious to learn how the rest of the family, and especially the fair member of it particularly designated in this singular harangue, behaved while her brother was pronouncing it; and more than all, how the object of it himself received the address. I will endeavor to give you the exact replies of my interesting companion, without repeating the various questions from me which elicited them.

"My young friend sat down. Throughout his speech, the family observed the utmost silence. The lady in question was as indifferent as an Indian could be, at least in manner. They all looked at me for my opinion—the lady excepted. I will confess that I felt embarrassed, tho' I had but half a dozen Indians for my audience. An answer however was necessary. 'I thank you, my friend,' said I, 'and needed not this new proof of your friendship. I am sensible Sher Manitou has smiled upon you; that you are his favorite children. But we white men have been spoiled by education; we have been taught to think many things necessary that you red men can do well without; and inferior as our mode of life is to yours, it is not the least of its evils that it has unfitted us for the simple pleasures that Sher-Manitou every day gives you. I have friends and a mother far away to the rising sun. She does not know the red men, and might not be a mother to your sister. Your sister, if I should take her to the rising sun with me, would pine for her green woods and wigwam by the Shiawassee. She will doubtless be happier as she is. She will take for her husband some red man like yourself, who will love her, and prize the blessings which Sher Manitou yields you. I again thank you, my friend, and your sister. I must, after a few days, leave this country; but I shall bear my friends in my heart, and in the crowded city where the white men live, I shall often sigh for these green woods, and lament the absence of my red friends.'" H.

FANATICISM; by the author of the Natural History of Enthusiasm. 1 vol., N. Y.: JONATHAN LEAVITT.—What a magnificent and yet what a fearful subject is presented to an able, learned, and philosophical writer, in the single word which constitutes the title of this remarkable volume? Fanaticism! what of evil has it not accomplished, what of mighty, empassioned, and irresistible in our nature has it not been the means of developing? To write its history, to understand and appreciate its motives, to judge its deeds, good and evil, with impartiality, and to deduce from the wildest excesses of this universal passion—universal as having had existence in all time and among all peoples, civilized and savage—conclusions not wholly discouraging to, or dishonoring, the immortal longings of our nature, is the task undertaken in this work. The former book of the author on the Natural History of Enthusiasm, prepossessed us in favor of this one, and we have been in nowise disappointed in our anticipations. A profound, philosophical, and withal charitable and Christian spirit, pervades the whole work. The heart of man is depicted with a firm and skilful hand; and the disguises which self love interposes to prevent each one from classing himself with those where his character and propensities should in truth place him—from seeing himself, in short, as others see him—seem to be penetrated with a searching eye; and the workings of the passions are portrayed with startling fidelity.

The style is vigorous, rugged, and sometimes overstrained, yet always forcibly arresting the attention. The divisions of the work are somewhat arbitrary; and such as they are, they are designated by odd and fantastic titles. On this head, the writer thus explains himself:—

It will be better to sieze upon certain leading varieties of our subjects, as marked by broad distinctions, easily traced in every age, and such as may be recognized, whenever they may recur, without hazard of mistake. These conspicuous varieties may be brought under four designations, of which the first will comprehend all instances wherein malignant religious sentiments turn inward upon the unhappy subject of them: to the second class will belong that more virulent sort of fanaticism which looks abroad for its victims: the third embraces the combination of intemperate religious zeal with military sentiments, or with national pride, and the love of power; to the fourth class must be reserved all instances of the more intellectual kind, and which stand connected with opinion and dogma. Our first sort then is Austere; the second Cruel; the third Ambitious; and the fourth Factious.

Or, for the purpose of fixing a characteristic mark upon each of our classes, as above named, let it be permitted us to entitle them as follows—namely, the *first*, The Fanaticism of the SCOURGE; or of personal infliction: the *second*, the Fanaticism of the BRAND; or of immolation and cruelty: the *third*, the Fanaticism of the BANNER, or of ambition and conquest: and the *fourth*, the Fanaticism of the SYMBOL; or of creeds, dogmatism, and ecclesiastical virulence.

After these four divisions each treated at considerable length, follows the conclusion that "the religion of the Bible is not fanatical." This occupies two long sections, one devoted to the Old, the other to the New Testament—the whole written in the spirit of a pure, pious, and earnest Protestant.

It should be added, that this is the republication of an English work; and we see with satisfaction that the cognate topic of *Superstition* is next to be touched by the same vigorous hand.

THE SELECT JOURNAL OF FOREIGN LITERATURE.—No. V.—Boston, CHARLES BOWEN.—Sound judgment and discriminating taste continue to characterize the selections for this excellent periodical.—The Life of Pym, from the Westminster—a description by *Raoül Rochette*, translated from the *Journal des Savants*, of the large, and very remarkable mosaic found at *Pompeii;* and an original article, well done, on Hamilton's Men and Manners in America; are among the most interesting articles of this number. The critical notices, too, are instructive and various, while under the head of "Intelligence" a birds-eye view is given of the movement of mind throughout Europe. To crown all, this Magazine is well printed.

CICERO, composing Vols. VIII, IX, and X, of the *Classical Family Library*, New York, HARPER & BROTHERS.—We are glad, after a long intermission, to find that this classical library is going on. It could not resume its progress under better auspices than those of Rome's great orator. The first two volumes contain the *Orations*, translated by Prof. *Duncan* The third includes the *Offices*, translated by Cockman; and the Essays on *Old Age and Friendship*, translated by Melmoth. An accurate biographical sketch precedes the work; and at page 45 of it, is a letter from Brutus to Cicero, urging him to resent the tyranny of Octavius, just beginning to bestride the Roman Empire, of which the sentiments might not be meditated in vain at this day.

IRELAND, A Tale by HARRIET MARTINEAU.—No. IX.—Philadelphia, E. LITTELL & T. HOLDEN.—A story of deep and thrilling interest, told with all the admirable writer's powers, is here produced to exemplify the silent miseries, which bad government, oppression, and ignorance entail on the Irish cottier, from generation to generation. It would be well for Ireland that both government and people would profit by the instructions of this well wrought tale.

YOUTH ADMONISHED—by J. THORNTON, author of Bereaved Parents consoled. New York: D. APPLETON & Co.—A well printed little pocket volume this, which in a brief view of the parable of the prodigal son, inculcates by modern instances, and much earnest discourse, the certainty that the paths of virtue are the paths of peace.

LITTELL'S MUSEUM OF FORIGN LITERATURE, &c. for January. Philadelphia: E. LITTEL and T. HOLDEN.—We have only to speak in praise of this miscellany as embodying always a large proportion of well selected and amusing matter. The present number is ornamented with a fine engraving of a striking picture of the Deluge.

NORTH AMERICAN REVIEW, No. LXXXII. Boston: CHARLES BOWEN. New York: G. & C. & H. CARVILL.—The Life of Cowper, which is the first article in this number, is of itself sufficient to stamp it as an able and attractive one. It is written with a genuine admiration of the genius of this remarkable man, and a beautiful sympathy with the fearful trials to which his fine intellect and whole moral nature were subject. The admirers of Cowper will feel that justtee is here done to his talents, and all gentleness exercised towards his infirmities. A good paper on botany and a capital one on Story's Constitutional Law precede a truly characteristic and interesting account of the American Whale Fishery—that hardest school of our hardy and adventurous seamen. Art. V, on the *last moments of eminent men*, is very pleasant reading—grave as the subject is. There is industry and good taste in the collection and arrangement of much anecdotical fact respecting the conduct of distinguished individuals, at the moment of entering upon the fearful passage to the grave. We have marked several interesting extracts, but with little hope of finding, for the present at least, any room for them in our crowded columns. Passing over other articles, we come to the concluding one, on *Hamilton's Men and Manners*, which is more bitter than able or well considered, save towards the close, when a better and higher tone is assumed and preserved.

THE TREASURY OF KNOWLEDGE AND LIBRARY OF REFERENCE, Parts IV, V and VI. New York: CONNER & COOKE.—This is truly what it purports to be—in a small compass a most abundant treasury of knowledge, on a vast variety of subjects. Part IV is a dictionary of quotations—V, Sir Rich'd Phillips's *Million of facts*, of which, if some few are apocryphal, the immense mass are correct—and VI is an *American biography*, brief but comprehensive.

LA REVUE FRANCAISE, for February; New York, HOSKINS & SNOWDEN.

LA FRANCE LITTERAIRE; No. : New York.

BIBLOTHEQUE CHOISIE de LITERATURE FRANCAISE; *Philadelphia*, Carey Lea & Carey.—Here we have three French periodicals, each aiming to disseminate a knowledge of and taste for French literature. They are all comparatively cheap; well printed; and as to their contents well selected. We like the language well enough to wish that all may have abundant patronage.

It has been said, that *La France Littéraire* is got up to put down *La Revue Française*. The facts we believe to be pretty much these: the chief attrac-

* Shet-Manitou, God; Micom-Manitou, the devil.

tion to the mass of American subscribers to the Courrier Francais, is its literary character and extracts; and this, it was obvious, would be materially diminished by any publication which, in the more convenient and durable form of a monthly pamphlet, should give matter of the same character. Hence, in self-defence, the literary extracts of the Courrier were thrown into the same form; and as they are longer, *la France litteraire* is published once a fortnight instead of once a month, as *la Revue Francaise* is. It is, too, cheaper than *la Revue*, because the matter which composes it, serves for the two publications. In all this we see nothing but the proper regard, which every one feels, for his own interest; nor can it add to or derogate from the merit of either publication that it has a rival: on the contrary, each thereby will become more zealous to excel, and the reading public will be benefitted by the competition.

The Foreign Quarterly Review; No. XXIV; American edition No. IV: Philadelphia, T. W. Ustick.—A good number—and then how cheap! three dollars per annum for a work that enlists such various talent. The article here upon the *Prussian System of Education*, that upon the *History of modern Italian freedom*, and that upon *Animal Magnetism*—in which the really surprising results supposed to have been accomplished by this revived *charlatanerie*, are most acutely examined—will recommend this periodical.

English History adapted to the use of Schools and Young Persons—*by the author of American Popular Lessons*. New York: R. Lockwood.—This is, with some modifications, omissions and additions, a republication—with what skill executed we confess we have not had time to examine; but we are willing to take it on trust, from the character and services of the lady, who presents it to the American public.

SUMMARY.

The Naval Lyceum is forming a collection of autographs of men of revolutionary fame. Among them they have obtained the following altogether remarkable letter addressed by *John Hancock* to *Robert Morris:*

Copy—"On Public Service."

Baltimore, January 24, 1777.

Sir—The Marine Committee, judging it of the utmost consequence that the *Frigate* Virginia should be got to sea as soon as possible, and finding it impracticable to procure here the necessary articles for the ship, without which she cannot proceed to sea, have determined to send to Philadelphia for them, and have sent the bearer, an officer of Capt. Nicholson's, to expedite the business; and I am now, in the name of the Marine Committee, to request you will immediately order such of the articles as are mentioned in the enclosed Memorandum, and can readily be got in Philadelphia, to be forwarded here without loss of time, in such manner as you shall judge best. The bearer will afford every aid in his power. I should think it would be no disservice in taking an Anchor and the Cables from one of the Frigates in Philadelphia, as you can with more ease replace them there, than we can procure them here; and all your Frigates are not in the readiness the Virginia is, and indeed she only waits for these articles. I submit it to you to conduct as you think best for the public service, but with respect to the Anchor and Cables, and Rigging, it is of the utmost importance they should be sent. *Two carts* put together would easily effect this, let the expense be ever so great; but care should be taken to prevent the Cables from chafing, by matting the turns, or putting canvass round the parts liable to rub against the wagon. But I need not give *you* any hints of this kind. I wish we may have as many of the articles as can be got, and I know you will exert yourself to effect this business.

I am, in behalf of the Marine Committee, Sir, your most ob't serv't,

John Hancock, *Chairman.*

Robert Morris, Esq.

Member of the Marine Committee.

P. S.—The enclosed letters to Com. Hopkins I leave open for your perusal; please to seal and forward by 1st good op'ty.

Great Fire at Rochester.

Correspondence of the Journal of Commerce—Rochester, Jan. 25.

We were visited this morning with a more calamitous fire than has ever before occurred in this village. About 5 o'clock it broke out in the Market, and before any effective exertions could be made by the firemen, the Market, which was of wood, and the block of wooden buildings extending from the Market on the west, to the Globe Buildings on the east side of the Genessee river, were enveloped in flames. From this block, it entered the Globe Buildings, an immense pile, near 100 feet square, six stories high on the west, and four on he east side, built of stone, which in less than two hours was burnt to the ground. The loss may be safely estimated at from 50 to $60,000, a large part of which falls on Messrs. Newell & Stebbins, who owned the south half of the Globe Buildings, in which they had a Dry-Goods Store and a Carpet Manufactory. They had no insurence. The other half of the Buildings was owned by R. B. Post of New York, on which I believe there was some insurance. The other occupants of the Globe Buildings, were Edwa d Roygen, Wareroom for Wool and Skins, loss $3000. Richard Van Kleck, Hat Store—property saved. Williams & Merrill, Leather Store—loss $1000. Jennings & Keeler, Leather Store—loss $800. Quincey Soddard, boot and shoe store—and about a dozen others occupying rooms for manufacturing purposes. The wooden block was of little value comparatively. It was occupied by J. O'Donoughue, auctioneer; Charles Smith, Reuben Leonard, E. S. Curtis, and one or two other grocers, and E. W. Collins, dry goods store. But a small part of the property was insured—probably, from what I have learnt, not to exceed $10,000. The fire originated in a grocery under the market.

[*From the Quebec Gazette, Jan.* 24]

DESTRUCTION OF THE CASTLE OF ST. LEWIS BY FIRE.

This building, the residence of the Governors General of British North America for the last 150 years, and so prominent an object in the view of the city of Quebec from the harbor, as it surmounts the bank of the precipice between the Lower Town and the citadel, has fallen an entire prey to the flames. The fire broke out yesterday about noon, in a room at the south end of the building, in the third story, occupied by Capt. M'Kinnon, A. D. C.; and though early discovered, and every means taken to arrest its progress, it flew with astonishing rapidity through the upper story, and continued to burn downwards, in spite of all the exertions of the troops and about a dozen fire engines, until this moment. It now presents its hundred openings, all bare chimneys, and its sooty and ruined walls—a couple of engines still struggling to subdue the flames in the south wing.

It was originally built by the French at a time not exactly ascertained, and though somewhat altered in form and improved—particularly in Sir J. Craig's administration, at an expense of about £10,000 to the Province—the walls, we believe all remain, having successively escaped with trifling damage the sieges of 1759 by Wolf, of 1775 by the Americans, and the bombardment of Sir William Phipps in 1690. Its site, since the earliest discovery of the country, had been successively the head quarters of the whole French possessions, at one time extending over the present British North American possessions, including Louisiana and the Territories on the Mississippi: and between 1759 and the American Independence in 1778, was the seat of the principal command of the whole continent of North America.

It was tenanted, when the fire broke out by lieut. gen. Lord Aylmer, governor-in-chief, and Lady Aylmer; capt. M'Kinnon, Grenadier Guards, and capt. Devie, 24th reg't., aides-de-camp, and Lieut. Paynter, extra aide-de-camp; with the different domestics of the establishment. The military secretary (capt. Airay) occupied apartments in what is called the Old Chateau, a building erected by the English after the conquest, and chiefly used as dancing and dining halls. The public documents belonging to the Administration were early removed, as was the plate, and by much the greater part of the furniture, but the latter was damaged. His Excellency had £3,000 insured on the furniture, (which is purchased from the preceding Governor on every change) at the Quebec Office.

The thermometer on the morning of the fire had marked 221 *below zero*, and, during the whole time it lasted continued from 2 to 8° below zero, with a strong piercing wind from west to south-west. Many of the engines were soon frozen up, and the hose, and every thing connected with them, could only be kept in any thing like order by the use of warm water, which was generously furnished from the breweries of Messrs. Racey, M'Callum, and Quirouet, and by the religious communities. The citizens and troops distinguished themselves by their services; but from the impossibility of reaching the part of the building overlooking the precipice, it soon became apparent that any successful attempt to arrest the progress of the flames was hopeless.

It will probably cost £25,000 to £30,000 to erect a new building, but the beauty of the situation, and the extent of the grounds will afford an opportunity of erecting one of the most ornamental and prominent public buildings in the city, of which Quebec is really lamentably deficient. The site belongs to the Military Government.

Lord and Lady Aylmer remained for some time yesterday with Colonal and Mrs. Craig, where her Ladyship, we understand, slept last night. Lord Aylmer is at present at the residence of the Hon. Col. Gore, Deputy Quarter Master General to the Forces.

The fire raged with considerable violence during last night, and frequent alarms were given, some fear being felt that the houses in Champlain and Mountain streets, immediately at the foot of the precipice on which the Castle is built, would be set on fire by the embers carried over by the wind, or by the falling and blazing timbers, which descended down the steep declivity on the tops of buildings or into yards. Fortunately, the snow on the houses protected them, and no further accidents have occurred. Had the fire taken place in the summer, there must have been a great destruction of property in the lower town.

[*From the Frederick (Md.) of Saturday, Feb.* 1·]

War on the Canal.—The account of the battles on the line of the Canal, published in another column, is said to be a little exagerated, particularly as to the number of persons killed. Since the reception of these details, we have learned that a kind of guerilla war was carried on until Tuesday last, when a treaty of peace was formally entered into and signed; and are gratified to state, that letteas were received in town yesterday, stating that the different parties had returned to their respective sections, and peaceably gone to work. This, we hope will be the end of this affair, If however, a disposition is manifested to disturb the public peace, means will be at hand, promptly to chastise the offenders. For, in obedience to the requsition of the governor of this State, the President has ordered two companies of U. S. Troops to the line of the Canal, with orders promptly to suppress all violent proceedings. One of the companies from the Fort of McHenry, under the command of Capt. Mackey, fully equipped, with fixed ammunition, magazine, &c. passed through this city, via the Rail Road, on Tuesday. They are a body of fine looking men, and excited much admiration. They arrived at Williamsport yesterday, and will remain as long as their services are deemed necessary.

Nearly thirty of the riotors were apprehended in the vicinity of Berlin and lodged in the jail of this county on Thursday last.

[*Correspondence of the Journal of Commerce.*]

Royal Gazette Office, Bermuda, Jan. 3.—The derelict vessel mentioned in the last Gazette as having been found amongst the rocks off the West End of these Islands, and towed into El's Harbor, has since been righted, bailed out and discharged of her cargo, which consisted of pork, flour, sperm candles, brandy, and plank, almost the whole of which is spoiled. Even the pork is very much damaged. The name of the vessel, where from or were bound has not been ascertained; for there were no papers discovered on board, and the vessel's stern was washed away. But little douot seems to be entertained that she belonged to the United States of America. The pork bears the brand, "Boston, Oct. 1832."—She must have been many months in the state in which she was found, for her deck was almost destroyed by worms. In her cabin the bones of human beings were found, and some wearing apparel having the names "M. Sever." and "C. Sever."—The articles taken from her are in safe keeping.

The Boston papers, referring to a similar account received there, identify the vessel as the *Schooner Eliza Ann*, which sailed from Boston on *11th December*, 1832, for Guayama, and had never been heard of. She was owned by Mr. James Brown, of that city, and on him the loss falls peculiarly heavy, having two sons on board of her, and Capt. B. his nephew. The cargo of the Eliza Ann, we under-

stand, corresponds with the statement, and the clothing undoubtedly belonged to Mr. Joshua Seaver, formerly an officer in the Boston Custom House, who took passage in the Eliza Ann, for the benefit of his health.

[*From the Philadelphia Gazette.*]

Disasters at Sea.—Extract of a letter from Capt. Curtis, of the packet ship John Wells, dated Cape Henlopen Roads, Jan. 30, 1834.—"I arrived here this morning. I have had one of the hardest passages I ever made, westerly gales all the passage—I was 15 days in the channel. In lat 48 06, lon 27 30, on the 22d Dec. boarded the British ship Asia, from Quebec, bound to London, water logged and a complete wreck. Capt. Stevenson and five of the seamen were drowned when the ship capsized, and Capt. Humbleton of the army. I took off the 1st and 2d officers and 11 seamen, they had been living seven days on a few beans. The men lost every thing when the ship capsized and are quite destitute.—[The Asia cleared at Philadelphia 23d Sept. for Quebec.]

U. S. brig Casket, Delaware Breakwater, Jan. 29.

SIR—I am sorry to inform you that the brig Amanthea, took fire, while at anchor in this harbor yesterday. Immediatery after discovering the fire I proceeded to the brig, with all hands from this brig, that could be spared, with buckets—on boarding her, found her to be on fire, fore and aft, below decks—finding it would be out of the question to put the fire out, I proceeded to the pilot boat Wm. Price for assistance, got the pilots Messrs. Edwards and Fuller, with some of their barges, went with me on board the brig. Immediately the pilots seeing her situation, thought most advisable to slip her cables, which was done, and run her on the beach, when she burnt down in a short time.

Had it not been for the assistance which this brig rendered, she would no doubt, have gone down, at her anchorage in the harbor. But little of any thing has been saved, the most saved is some sails and rigging—she may be considered nearly a total loss. The wind is now blowing hard from northward, and quite cold.

The brig Benj. Ruggless, and schr. Harriet; also, the pilot boats Wm. Price, and Mary Ann, are in this harbor. Respectfully your's

JNO. BURTON.

Very Distressing.—The Ship Brunette, which arrived at Boston on Saturday, on the 28th Jan., in lat 51 25, lon 68, fell in with schr. Chancellor Ross, from Portland, for *Boston* with wood. Took off the Capt. and crew, all of whom were badly frozen; the eldest son of the captain died in an hour after being brought on board the ship, and Capt. Ross died on Saturday morning at 2 o'clock. Two others remain badly frost bitten, one of whom, the youngest son of Captain Ross, it is supposed, cannot recover. The schr. sailed from Portland, 21st and struck on a ledge the same night, received much injury, and was driven to sea nearly full of water. When the crew were taken on board the Brunette, the water was three feet deep on the schooner's cabin floor.

Melancholy Accident.—On Wednesday morning the 15th ult., the steamboat Westchester, while on her passage from Bridgeport to Norwalk, and when within a short distance of the letter harbor, fell in with a boat adrift. Captain Brooks immediately despatched his boat for the purpose of picking it up on reaching which, it was ascertained that a young man dangerously wounded and nearly lifeless was lying in her. It proved to be Mr. Charles White, of Norwalk. He had left Old Well early in the morning on a gunning excursion, and had with him a double barrelled gun, which it is supposed he fired once, and in the act of re-loading the empty barrel, the contents of the other were discharged into his right arm near the shoulder. When taken on board, he was unable to speak; but after reaching home he articulated a few words. He died about 4 o'clock in the afternoon. Mr. White was an exemplary and worthy young man, and has left an affectionate wife to whom he had been married but a few months, and a large circle of relatives and friends, to mourn his untimely end. He was a son of Mr. Samuel White.—[Danbury (Ct.) Gazette.]

BOSTON, Feb. 4.—A check from the General Post Office, for $7000, upon the Commonwealth Bank of this city, was presented at the counter of the Bank on Saturday, and protested for the want of funds: probably not for want of custom-house, but of Post Office deposites. The great deficiency in the Post Office Department has been a matter of notoriety for some time.—[Traveller.]

Large Organ.—The Organ, recently erected by Mr. Henry Erben in St. Philip's Church, is 26 feet in height, 16 feet in width, and 10 feet in depth. It contains three distinct rows of keys and pedals. The Great Organ contains ten stops, viz. Open Diapason, Stopped Diapason, Principal, Twelfth, Fifteenth, Tierce, Sesquialtra of four ranks, Cornet of five ranks, Flute, Trumpet. The Choir Organ contains five stops, viz. Stopped Diapason, Dulciana, Principal, Fiute, Fifteenth. The swell contains seven stops, Open Diapason, Dulciana, Violano, Cornet of three ranks, Trumpet and Hautboy.

The Pedals of two stops, Double Open, Diapason and Open Diapason. The largest wooden pipe is 17 feet long and 16, 14 inches wide; the largest medal pipe is 13 feet long, and 10 inches in diameter, being the largest *medal* pipe in the United States. Total number, 24 stops, 1483 pipes. cost $4000. Compass of the keys, from Double G. in the Bass, to Fin Alt. Compass of the Pedals, from double, double C. to one octave above. The case of the Organ is of the Corinthian Order, to correspond with the architecture of the Church, and is of elegant mahogany.

This Organ is the largest instrument of the kind in the Southern States. It combines with its great powers, stops of the most dulcet tones, and has been pronounced by competent musical men in New York and in this city a very superior instrument.—[Charleston Courier.]

[*From the Albany Argus.*]

NORTH RIVER BANK.—We will give below a statement of the condition of this institution on the 27th ult. as contained in a report made to the Senate on Saturday, verified by the oath of the President and Cashier, pursuant to a resolution of that body. It exhibits the affairs of the bank as being in a sound and prosperous condition.

	Cr.	
Real estate, consisting of banking house and property in the Eighth Ward,	$ 34,106	21
Bills discounted,	903,935	49
" protested (a part of which will be recovered,)	4,928	78
Notes of city banks,	71,680	82
" country	11,309	51
Specie,	72,094	34
Due from city banks,	74,612	52
" foreign,	32,917	05
Plates and paper	2,989	35
Expense account,	142	67
	$1,208,015	74
	Dr.	
Capital stock paid in,	$500,800	00
Notes in circulation,	181,514	00
Unpaid dividends,	2,535	75
Profit and loss	42,009	41
Discount received since 1st Jan. inst.,	4,031	44
Due to city banks,	159,827	68
" foreign	13,790	11
" insurance companies	7,654	20
" individuals,	297,243	15
	$1,208.715	74

Florida Steamboat.—The new boat built in Savannah by Mr John Gant, has been some time launched. She is intended for the southern trade, and is called the Florida. Her engine has arrived in the brig Lela from New York, and we understand, will be put up with all despatch.

When she commences running, the line of Steam Navigation from Maine to Florida will be complete. A line of stages from Jacksonville, on the St. Johns River, to St. Marks, a distance of only 140 miles, and a steamboat between St. Marks and New Orleans, would render it the grand travelling route from New Orleans to the north. Starting from New Orleans in a steamboat, and disembarking at St. Marks, and taking a stage across to Jacksonville, E. F. the passenger could there embark on board this steamboat, and having arrived at Savannah, he could take his choice of going on in one of our fine packets, or continuing his route by steam to Charleston and thence northward. In this way a traveller could reach New York from New Orleans, with only one hundred and forty miles of land carriage!—We understand that such a connection between Jacksonville and St. Marks, is in contemplation.

The brig Draco, Bangs, at Baston from Cronstadt, reports having sailed, November 12th, from Elsineur, in company with ship Mount Hope for New York, and having passed her ashore on the Lapsand, having drifted on by the current, but supposed she got off next day.

[*From the Norfolk Herald of Monday.*]

ARRIVAL OF THE U. S. SHIP JOHN ADAMS.—The United States ship *John Adams*, P. F. Voorhees, Esq. Commander, arrived in Hampton Roads on Friday evening last—officers and crew all well. The John Adams sailed from Gibraltar, 1st November and arrived at Mogadore on the 5th; sailed thence on the 7th, and hove to off Madeira for several hours on the 10th, and sailed for Teneriffe, where she arrived on the 16th; sailed thence on the 20th, and arrived at Cape Messurado 10th Dec., where they boarded the American brig Whim; sailed 14th December for Martinique, and arrived there on the 6th January—7th, boarded brig Sarah, 25 days from Bath, (Me.)—arrived 8th, brig Caroline, 13 days from Portland; 9th, schr. Pilot, of New York, 15 days from Newbern, (N. C.)—Sailed from Martinique January 12th—28th, in lat. 37, 06, lon. 71 min. 18, spoke Whale ship Pindus, bound to New Bedford, and schr. Ocean, bound to Boston.

The *John Adams* left at Athens, 13th Sept. U. S. ship *United States*, Captain Nicholson, with Commodore Patterson, and family on board, bound to Constantinople; and at Port Mahon, 21st Oct. U. S. ship *Constellation*, Capt. Read, from Marseilles—all well. Spoke off Cape de Gatt, a few days previous to 1st Nov. U. S. ship *Delaware*, Capt. Ballard, from Gibraltar bound to port Mahon.

A French Corvette had arrived at Messurado, charged with presenting the thanks of its Government, for the hospitality, and kindness of the Colonial Cruiser towards the officers and crew of a French vessel which had been wrecked on the coast near Goree.

The *John Adams* came up yesterday morning and anchored off the Naval Hospital, where she fired a salute, which was returned from the Navy Yard.

Passengers in the J. A.—Capt. J. H. Conkling, late of brig Admittance, of New York, sold at Gibraltar; Mr. P. S. Fish, of New York, late Captain's Clerk of Frigate United States, and Mr. Warren, of Boston.

List of officers attached to the United States ship John Adams, 1st Feb. 1834.

PHILIP F. VOORHEES, Esq. Mast. Comdt.
Thomas Pettigrue, 1st Lieutenant.
Edmund Byrne, 2d do
Chs. H. McBlair, 3d do
Neal M. Howeson, 4th do
G. R. B. Horner, Surgeon.
Edward T. Dunn, Purser.
James F. Schenck, Act. Sailing Master.
J. Vaughan Smith, Asst. Surgeon.

Midshipmen.—F. V. Dilberghe, W. S. Ringgold, W. L. Hernden, C. Watkins, James Anderson, R. B. Pegram, N. G. Bay, J. H. North, F. E. Barry, B. F. Anderson.

William Waters, Boatswain.
David Taggert, Gunner.
Daniel Bane, Carpenter.
Madison Wheedon, Sail Maker.
Frederick Farlie, Captain's Clerk.

Arrival of the Hon. Mr. Hamm, from Chili.—The brig Lady Adams, of Baltimore, anchored in Hampton Roads on Saturday evening last, in the remarkably short passage of 70 days from Valparaiso, via Coquimbo. Among the passengers in the L. A., was the Hon. John Hamm, Chargé d'Affaires of the U. States to the Republic of Chili, who came up to this place last evening in the steamboat Hamptos, and will leave this morning in the steamboat Pocahontas, for Baltimore, via Annapolis. We have been obligingly favored with the following extract of a letter from a passenger on board the Lady Adams:

"Mr. Hamm is the bearer of the Treaty of Commerce and Navigation which he concluded with the Chilian Government some time ago, and which was duly ratified by the President and Senate of the United States; but the time limited for the exchange of ratifications at Washington having expired, and sundry amendments having been proposed by the Chilian Congress, it became necessary, as I learn, to enter with the Plenipotentiary of Santiago into an explanatory convention, and to have again the whole matter submitted to the Chilian Congress for their approbation. These preliminary arrangements were all satisfactorily settled in November last, by the ratification of the Treaty, as well as the explanatory Convention, and an envoy was appointed to proceed directly to Washington, for the purpose of exchanging the ratifications, and reside near our Government. Senhor Don Manuel Carvallo, the Chilian Envoy, is also a passenger in the Lady Adams, and will proceed to Washington with Mr. Hamm, for the purpose of laying the whole matter before our Government, he being the bearer of the Treaty and Convention in the Spanish language.

MINT OF THE UNITED STATES.

Philadelphia, 1st Jan., 1834.

Sir: I have the honor to submit a Report on the general transactions of the Mint during the last year.

The coinage effected within that period, amounts to $3,765,710; compristing $978,550 in gold coins, $2,759,000 in silver, $28,169 in copper, and consisting of 10,307,790 pieces of Coin: viz.

Half Eagles,	193,630	ps,	making	$968,150
Quarter Eagles	4,160	"	"	10,400
Half Dollars	5,206,000	"	"	2,603,000
Quarter do.	126,000	"	"	39,000
Dismes	485,000	"	"	48,500
Half Dismes	1,370,000	"	"	68,500
Cents	2,739,000	"	"	27,390
Half Cents	154,000	"	"	770
	10,370,790			$3,765,710

Of the amount of gold coined within the past year, about $85,000 were derived from Mexico, South America, and the West Indies; $12,000 from Africa; $868,000 from the Gold Region of the United States, and about $13,000 from sources not ascertained.

Of the amount of Gold of the United States, above mentioned, about $104,000 may be stated to have been received from Virginia; $475,000 from North Carolina; $660,000 from South Carolina; $216,000 from Georgia; and about $700 from Tennessee.

The annexed statement exhibits the quantity of gold received from the several districts of the United States which have thus far produced it in sufficient quantities to be an object of regard, commencing with the year 1824. Previously to that period, gold had been received at the mint only from North Carolina, from which quarter it was first transmitted for coinage in 1804. During the interval, however, from that date to 1823, inclusive, the average amount had not exceeded $2,500.

STATEMENT of the Amount of Gold produced annually from the Gold Region of the United States, from the year 1824 to 1833 inclusive.

	Virginia.	N. Carolina.	S. Carolina.	Georgia.	Tennessee.	Alabama.	Total.
1824		$5,000					$5,000
1825		17,000					17,000
1826		20,000					20,000
1827		21,000					21,000
1828		46,000					46,000
1829	$2,500	134,000	$3,500	$202,000	$1,000		343,000
1830	24,000	204,000	26,000	176,000	1,000	$1,000	432,000
1831	26,000	294,000	22,000	140,000	1,000		483,000
1832	34,000	458,000	45,000	216,000	7,000		760,000
1833	104,000	475,000	66,000				645,000
	$190,500	$1,574,000	$156,500	$744,000	$9,000	$1,000	$3,781,000

In the report of 1st January, 1833, it was remarked that the quantity of gold of the United States brought to the mint in the year 1832, was regarded, according to estimates entitled to great respect, as not much exceeding one half the quantity produced from the mines within that year; nearly an equal amount, being supposed to have been exported uncoined, or consumed in the arts. Nothing has since occurred to create a doubt of the correctness of that conjecture. It is altogether probable, that the remark is equally true in regard to the last year, and that the amount of gold derived from the United States, within that period, has exceeded one million and a half of dollars. This sum, it is believed, is not less than about one fifth of the amount of gold produced within the same period, from all other sources, in Europe and America, estimated according to the best authorities.

I have the honor to be, with great respect, your obedient servant,

SAMUEL MOORE,
Director of the Mint of the United States.
To the PRESIDENT of the United States.

Seamen's Bank for Savings.—The annual report of this institution, located in the city of New-York, was made to the Senate yesterday, showing the following result of the transactions of the year 1833, and the state of its funds:

Am't of deposites rec'd from 569 dep.	$74,288 74
" Interest	4 255 16
" Stock redeemed	7,200 03
" in treasurer's hands at close of 1832	22, 367 19
	$188,111 12
Of this am't there was paid to depositors	$70,625 61
Invested in U. S. Stock	8,590 99
Expenses	1,040 40
Balance in treasurer's hands	27,857 12
	$108,111 12

The total amount invested in stocks is $66,165 28, and the trustees state that since closing the accounts for the year, they have been enabled to credit a rate of 5 per cent. per annum to each account not exceeding $500, and to each account of larger sums, 4 per cent. per annum.

We understand that orders were yesterday received at the Navy Yard, to fit out the frigate Brandywine for sea *immediately*. It is not known where she is to go, but we presume the intention is to send her out to England with a new Minister, (Mr. Stevenson, probably,) and then to proceed to the Mediterranean station, to relieve the Constitution.—[Gazette.]

Mechanics' Bank of Patterson.—In consequence of the circulation of some unfounded reports abroad, in relation to this institution, added to the pressure of the times, a run has been made upon it for some days past. It has, however, promptly met every demand, and we are satisfied is in a perfectly sound condition; as a corroboration of which, from a source and of a nature that must command confidence, we are enabled to annex the following, from the Governor of the Society for Establishing Useful Manufactures:—[Patterson paper.]

We have about $90,000 due to us in Patterson, for Lots sold. I will take Mechanics Bank Notes at the rate of ten per cent. premium for said debt—that is, every man indebted to us, who will pay one hundred dollars in Mechanics' Bank Notes of Patterson, within one month, we will credit him on his contract, one hundred and ten dollars. Yours, truly.

ROSWELL L. COLT,
Patterson, January 27, 1834.

RIOTS ON THE OHIO AND CHESAPEAKE CANAL.—The President of the United States, as we learn from the National Intelligencer of yesterday, has, on the resolution of the Legislature of Maryland, calling upon the General Government for aid in suppressing the riots referred to in the annexed article, ordered two companies of United States artillery to proceed forthwith to the scene of disturbance, and report themselves to the civil authority for orders.

RIOTS ON THE LINE OF THE CANAL.—We regret to have to inform our readers that the account of the pacification of the riot among the laborers upon the Chesapeake and Ohio Canal, above and below Williamsport (in Washington county, Md.) turns out to be premature. Since the return of the Hagerstown volunteers, with a number of men under arrest, fresh and fatal hostilities have broken out, in the course of which, as appears by the following account, a number of lives have been lost.—[National Intelligencer.]

WILLIAMSPORT, (MD.) JAN. 18.

Since the foregoing event, great commotion has existed among the hands. Very little work has been done, and a state of alarm and warlike preparation has taken its place. On Thursday last, we are informed, a party of *Corkonians* committed excesses along the line above this place. Yesterday morning a small party were seen approaching this place from above, and were met on the Aqueduct and driven back by an opposing party of their countrymen in the town. In this affray one man was very seriously beaten and wounded. The citizens of the town, with commendable alacrity, soon put themselves in military order, under arms for the protection of the peace, and remained under arms for the balance of the day and the greater part of the night.

This scene was soon followed by another which resulted in a disastrous battle and several deaths. A party of Fardouns or Longfords, consisting of about three hundred men, headed by intrepid leaders, were announced as approaching from below. Their design they stated to be to pass up the line of the canal to the upper dam, for the purpose of exhibiting their strength, and not to commit a breach of the peace, unless attacked. They were armed in part with guns, but principallly with helves, clubs, &c. They passed up quietly over the aqueduct, and on their way, as we learn, three or four hundred more of the same party fell into their ranks. At the upper dam, in a field on the other side of Miedlekauff's, they met the enemy in battle array, drawn up on the top of a hill, about three hundred in number, and armed, in part, with military weapons.

The information we have is, that the attack or at least a challenge to the combat, was made by the latter party. Volleys of shot were exchanged; some men were seen to fall, and the party above begun to fall back and disperse before the superior forces of their enemy. A pursuit ensued through the woods, where frequent firing was heard, and no doubt many lives were taken. *Persons who traversed the field after the battle was over, observed five men in the agonies of death, who had been shot through the head; several dead bodies were seen in the woods, and a number wounded in every direction.* Those who observed the battle describe it as one of great rage and most deadly violence. All the deaths and wounded are reported to have been of the *Corkonians.*

About ten o'clock last night the victorious party returned, and passed quietly through this place, after halting a few moments in one of the public streets, to their respective sections and shantees below the town. Quiet was restored for the balance of the night.

We have thus attemptod merely a sketch of the horrid barbarities committed in this neighborhood through the past week. The public peace has been outraged, and the civil authorities contemned. It remains for the officers of justice to take the necessary steps to repair these gross violations of the law.

POSTSCRIPT—Since writing the above, a principal leader of one of the parties has been arrested for examination. The volunteer companies have arrived from Hagerstown, commanded by Col. Wm. H. Fitzhugh, who is also Sheriff of the County, and are now in readiness to aid the civil authority. An express has been dispatched to the Seat of Government for a sufficient regular force, to be sent on and stationed here, or at other suitable points along the line of the Canal, to preserve order among the laborers, and for purposes of general protection.—[Banner.]

A Bank Blow-up!—We understand that there has been a blow up of a domestic Bank (not under the Safety Fund) at the village of New London, Oneida County. In other words, one of the most extensive gang of counterfeiters ever discovered in this State, has just been broken up at that place. Sixteen of the counterfeiters have been apprehended. Among this precious lot, we are informed that there is a lawyer, a tavern-keeper, and a constable!—[Albany Evening Journal.]

LOVE ME!

Love me—Love me—like the stars
That love to shine at night,
With sparkling eyes
In joy arive
To kiss the gloom and make it bright.
My heart—My heart is a gloomy veil,
That time has darken'd o'er;
But come with the light
Of thine eyes, star-bright,
And darkness shall be no more.
Love me—Love me—like the sun
That warms while it lightens too;
Brings flowers to life
With sweetness rife,
I care not for life without flowers to view.
My heart—My heart's a garden wild,
Its flowers are left to perish;
But come like the sun,
And smile upon
The heart's garden roses, and cherish.
Love me—Love me—like the moon,
For the moon is chaste and bright;
And Love to endure,
Must, like moonlight, be pure,
And holiness be in its light.
My heart—My heart's like a placid brook

That lies in a garden fair;
And the sun-rays at noon,
And the stars and the moon,
Must beam on and brighten there.

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal. d6

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 81 RJMM&F

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ¾ inch,
200 do. 1¼ do. ¾ do.
40 do. 1½ do. ¾ do.
800 do. 2 do. ¾ do.
800 do. 2½ do. ¾ do.
soon expected.

Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

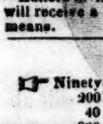
Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2¼, 2¾, 2½, 3, 3½, 3¾, and 3½ inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.
A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

ALBANY SEED STORE AND HORTICULTURAL REPOSITORY.



The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, *warranted* of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

ALSO—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wutzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of *Farmers*.

W. THORBURN,
347 N. Market st. (opposite Post Office.)

☞ Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

*** Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardeners' Magazine.

MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, *Daily, Tri-Weekly, and Semi-Weekly*; either or all of which may be seen and obtained by those who wish them, by calling at 347 *North Market street, Albany*.

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. 81 RJMM&F

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads

No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlaem Railroad, now in operation.

J28tf

RAILROAD CAR WHEELS AND BOXES,

AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

☞ TOWNSEND & DURFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833.

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad., Germant. and Norris. Railroad

m1 1y

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR, 35 Wall street.

New-York, August 14, 1833.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29tf RM&F

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perural, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m16

*** At the commencement of the last year I offered to send the American *tri-weekly* instead of *semi-weekly*, together with two of my periodicals, in exchange to those who would publish my advertisements of the different periodicals. In consequence of this notice, the exchange list was increased to 165. I soon found that the expens. would be greater than I had anticipated, yet I had made the offer, and would of course continue it through the year—as I have done. I however find it *too expensive* to coutinue to send as heretofore. The circulation of my PERIODICALS, (upon which the expense falls,) will not warrant it, and I must, therefore, notwithstanding the uniform kindness with which they have been treated by those to whom they have been sent, materially *reduce* their *exchange list*.

The *semi-weekly* American will hereafter be sent in exchange to those who will publish the following advertisements a few weeks for the difference of price. *New-York, January* 20, 1834.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at $3; or in *semi-monthly* form, of 32 pages, stitched in a cover of colored paper, at $4 *per annum, in advance.* The *first* and *second* volumes of the Journal may be had in *two* parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts $1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its *second* year. It will be continued in a manner altogether *superior* to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and *for several years*, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The *first year*, or *two* first volumes, *having been stereotyped*, may now be had either in numbers, or bound in boards—either at *wholesale* or *retail*. Price $1 50 per vol. in numbers, or $1 75 in boards, or $3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the *second* volume of a *new series*. It is published once a month, in quarto form of 32 pages to each monthly number, at $3 per annum *in advance*. The last volume may be had either stitched in a *cover*, so as to be sent by mail, or in boards. Price, *stitched*, $3 25; in boards, $3 50. *Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume.* Published at No. 35 Wall street, N.Y. D. K. MINOR, Proprietor.

Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large *octavo* pages, embracing the most *choice* articles from the best *agricultural* and *mechanical* publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, $5 per annum, in advance.

N. B. *A small edition only will be published.*

D. K. Minor also publishes the NEW-YORK AMERICAN, *daily, tri-weekly*, and *semi-weekly*.

Also, the PLOUGH-BOY, a cheap agricultural publication, *of eight quarto pages*, is issued once a week, at $1 50 per annum, *in advance*. It contains much interesting reading upon agriculture, &c.

☞ All Letters and Communications for the above publications, may be addressed, *free of postage*, to

D K. MINOR.

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.

81 E J M M & F

ALMANAC FOR THE YEAR 1834.

	Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.	MOON'S PHASES.
Janu'ry				1	2	3	4	3d Q. 2 11 17 M
	5	6	7	8	9	10	11	New 9 6 14 E
	12	13	14	15	16	17	18	1st Q. 17 9 46 E
	19	20	21	22	23	24	25	Full 25 5 17 M
	26	27	28	29	30	31		3d Q. 31 8 20 E
Feb'ry							1	
	2	3	4	5	6	7	8	New 8 0 5 E
	9	10	11	12	13	14	15	1st Q. 16 4 44 E
	16	17	18	19	20	21	22	Full 23 4 5 E
	23	24	25	26	27	28		
March							1	
	2	3	4	5	6	7	8	3d Q. 2 7 21 M
	9	10	11	12	13	14	15	New 10 6 22 M
	16	17	18	19	20	21	22	1st Q. 18 8 5 M
	23	24	25	26	27	28	29	Full 25 1 20 M
	30	31						3d Q. 31 8 32 E
April			1	2	3	4	5	
	6	7	8	9	10	11	12	New 8 11 46 E
	13	14	15	16	17	18	19	1st Q. 16 7 21 E
	20	21	22	23	24	25	26	Full 23 9 42 M
	27	28	29	30				3d Q. 30 11 38 M
May					1	2	3	
	4	5	6	7	8	9	10	New 8 3 28 E
	11	12	13	14	15	16	17	1st Q. 16 2 59 M
	18	19	20	21	22	23	24	Full 22 6 7 E
	25	26	27	28	29	30	31	3d Q. 30 4 0 M
June	1	2	3	4	5	6	7	
	8	9	10	11	12	13	14	New 7 5 0 E
	15	16	17	18	19	20	21	1st Q. 14 8 6 M
	22	23	24	25	26	27	28	Full 21 3 26 M
	29	30						3d Q. 28 9 3 E
July			1	2	3	4	5	
	6	7	8	9	10	11	12	New 6 4 17 E
	13	14	15	16	17	18	19	1st Q. 13 0 19 E
	20	21	22	23	24	25	26	Full 20 2 22 E
	27	28	29	30	31			3d Q. 28 2 13 M
August						1	2	
	3	4	5	6	7	8	9	New 5 1 38 M
	10	11	12	13	14	15	16	1st Q. 11 5 17 E
	17	18	19	20	21	22	23	Full 19 3 17 M
	24	25	26	27	28	29	30	3d Q. 27 6 52 M
	31							
Sept'br		1	2	3	4	5	6	New 3 9 53 M
	7	8	9	10	11	12	13	1st Q. 10 0 32 M
	14	15	16	17	18	19	20	Full 17 6 24 E
	21	22	23	24	25	26	27	3d Q. 25 10 10 E
	28	29	30					
Octob'r				1	2	3	4	New 2 6 4 E
	5	6	7	8	9	10	11	1st Q. 9 11 7 M
	12	13	14	15	16	17	18	Full 17 11 32 M
	19	20	21	22	23	24	25	3d Q. 25 11 31 M
	26	27	28	29	30	31		
Nov'br							1	New 1 3 11 M
	2	3	4	5	6	7	8	1st Q. 8 1 35 M
	9	10	11	12	13	14	15	Full 16 5 54 M
	16	17	18	19	20	21	22	3d Q. 23 10 38 E
	23	24	25	26	27	28	29	New 30 1 51 E
	30							
Dec'br		1	2	3	4	5	6	1st Q. 7 7 47 E
	7	8	9	10	11	12	13	Full 15 11 58 E
	14	15	16	17	18	19	20	3d Q. 23 7 52 M
	21	22	23	24	25	26	27	New 30 2 16 M
	28	29	30	31				

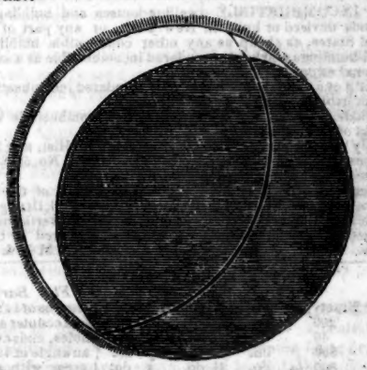
SOLAR AND LUNAR ECLIPSES IN THE YEAR 1834.—*First*, a small eclipse of the sun, on the 7th day of June, at 5 h. 2 m., invisible at New-York.

Second.—A total eclipse of the moon on the 21st day of June, in the morning, visible at New-York, as follows:

Beginning of the eclipse, at 1 h. 58 m.
Beginning of the total darkness, at 3 h. 1 m.
Middle of the eclipse, at 3 h. 43 m.
Ecliptical conjunction, at 3 h. 46 m.
End of total darkness, at 4 h. 25 m.
End of the eclipse, at 5 h. 28 m.
Digits eclipsed, 17¾ from the south side of the earth's shadow.

Third.—A large eclipse of the sun on the 30th of November, in the afternoon, visible at New-York, as follows:

Beginning of the eclipse, at 1 h. 6 m.
Greatest obscuration, at 2 h. 29 m.
Apparent conjunction, at 2 h. 30 m.
End of the eclipse, at 3h. 47 m.
Digits eclipsed, 10° 36′ on the southern limb of the sun, as represented in the following figure; the dark curved line represents the moon's centre across the sun from west to east.



The sun will be centrally and totally eclipsed on the meridian in latitude 40° 16′ north, and longitude 23° 33′ west from New-York.

The sun will be totally eclipsed at Charleston, South Carolina, and at Augusta, in Georgia, and many other places in the states of South Carolina, Georgia, Alabama, Tennessee, and Missouri, &c.

Fourth.—Of the moon, on the 15th day of December, in the evening, visible as follows at New-York:

Beginning of the eclipse, at 11 h. 4 m.
Middle of the eclipse, at 0 h. 20 m.
End of the eclipse, at 1 h. 30 m.
Digits eclipsed, 7° 40′ on the moon's southerly limb.

List of Subscribers to the Railroad Journal who have paid in advance to Jan. 1, 1835, continued from January 25, 1834.

W. Darlington, Westchester, Pa.
J. M. Fessenden, Boston, Mass.
Arthur Hoyt, Boston, Mass.
Morrell Wyman, Boston, Mass.
Edwin Schenck, Newton, Mass.
Thomas Gardner, Hackensack, N. J.
Stephen Gough, 2 copies, Leonardtown, Md.
P. Gough, St. Inigoes, Md.
A & G. Ralston, Philadelphia, Pa.
C. S. Matthews, Aquackanonk, N. J.
Tindall Madison, Richmond, Ind.
E. Martin, Bordentown, N. J.
G. T. Olmsted, Princeton, N. J.
B. Provoost, Jersey City.
Elisha Johnson, Rochester, N. Y.
Charles Carson, Pleasant Garden, N. C.
J. M'Elrath, Brindleton, N. C.
E. B. Stickney, Watervliet N. Y.
Henry Jones, Fort Gratiot, M. T.
G. W. Weaver, Frederick, Md.
J. B. Jervis, Utica, N. Y.
Troy House, Troy, N. Y.
Lt. Burnet, West Point, N. Y.
A. J. Comstock, Adrian, M. T.
F. Zimple, New Orleans, La.
J. P. Kirkwood, Stonington, Con.
W. D. Cushman, Albany, N. Y.
John Strunk, jun., Olean Point, N. Y.
Alexander Pairis, Boston, Mass.
Charles Loss, Camden, N. J.
James Leffel, Springfield, Ohio.
P. A. Sprigman, Ditto.